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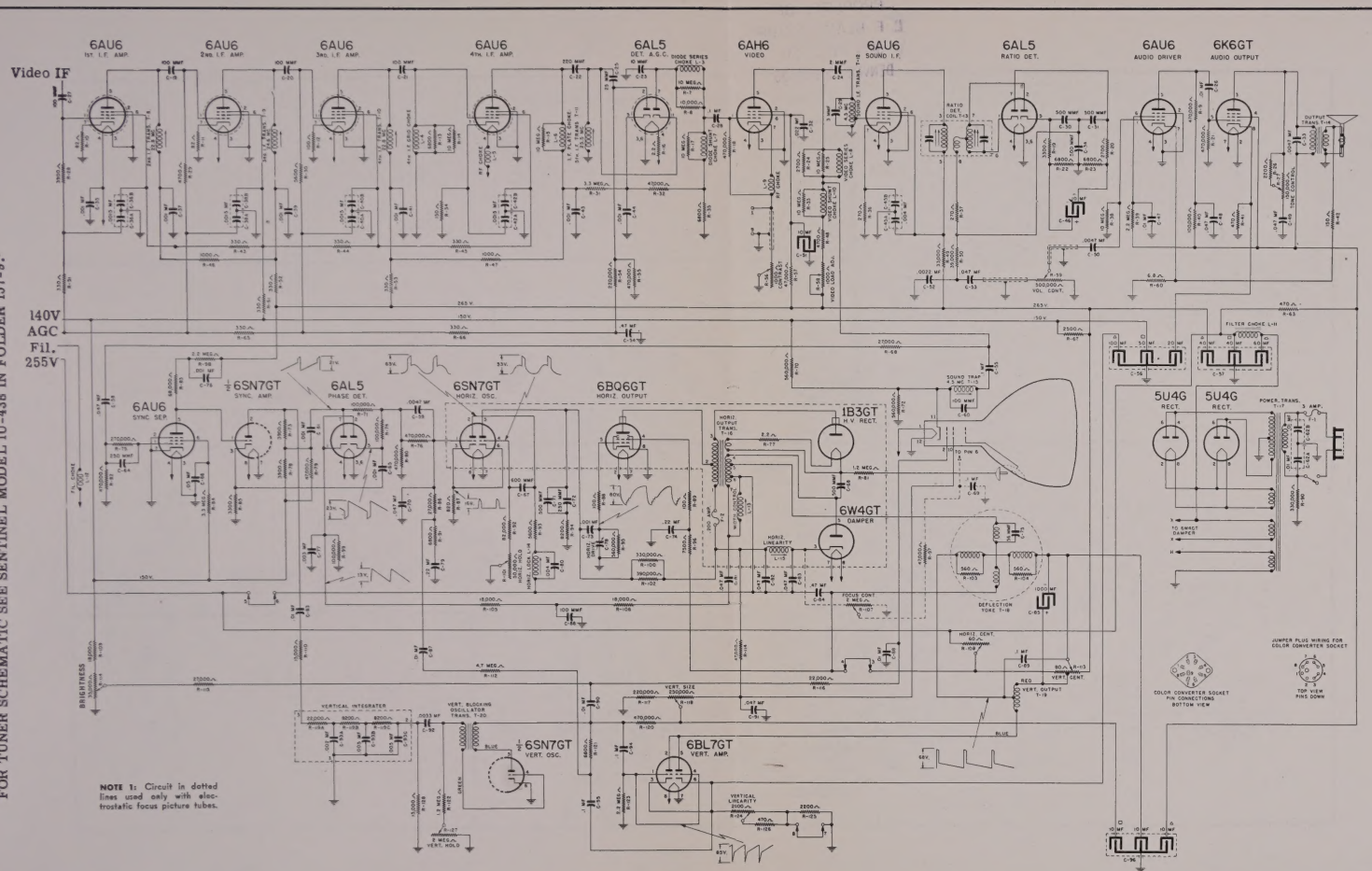

The Cooperation of the Manufacturer of This Receiver Makes It Possible to Bring You This Service

SENTINEL MODELS 1U-447-A
1U-448-A, 1U-449-A, 1U-450-A, 1U-451-A

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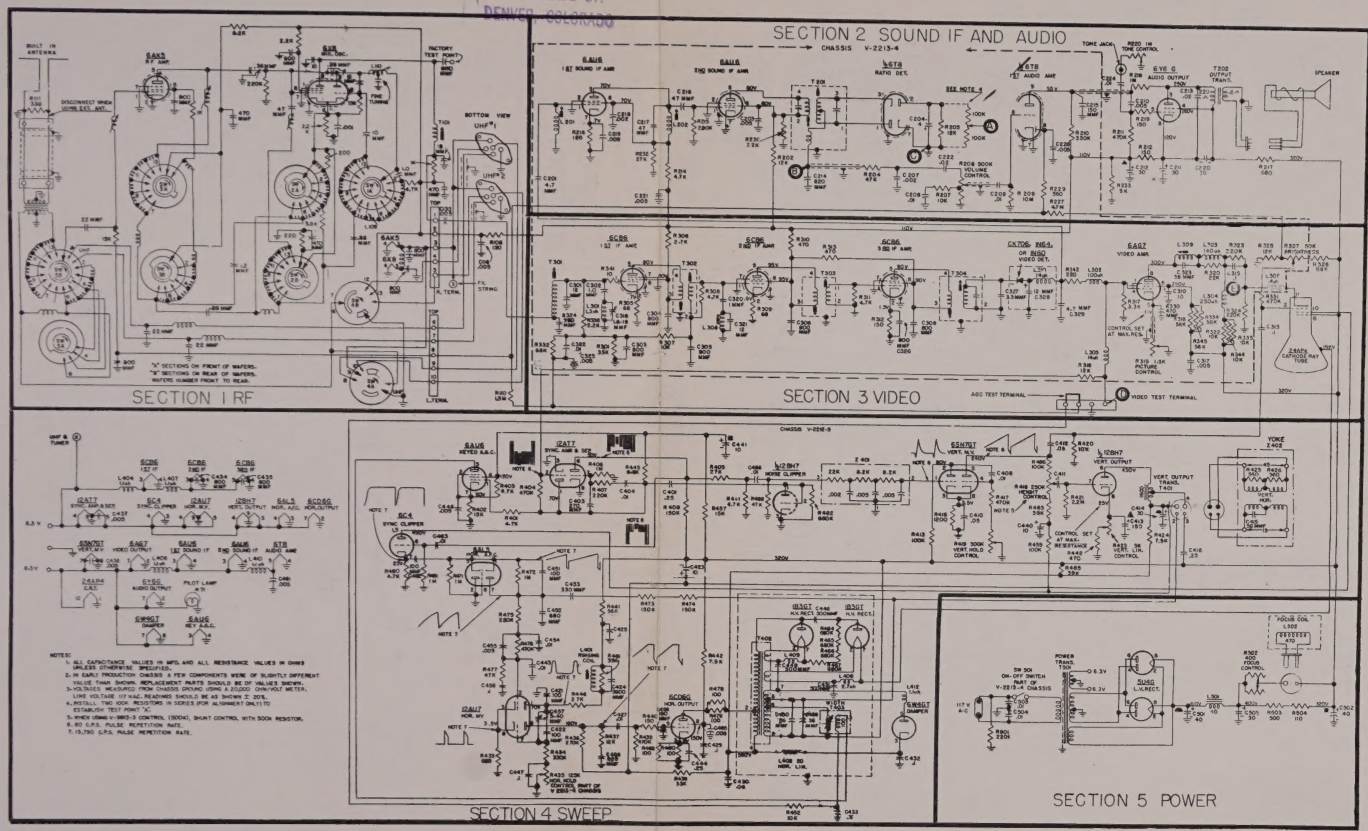

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WESTINGHOUSE
MODEL H-688K24 (Ch. V-2219-1)

PRELIMINARY DATA
The data contained in this folder is published in advance of regular PHOTOFACT Coverage

SET 169 FOLDER 1A

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AIRCASTLE
MODELS 652.A25, 652.A35

VOLUME
CONTROL
ON-OFF SW.

AIRCASTLE
MODELS 652.A25, 652.A35

TRADE NAME	Aircastle Models 652.A25 (Single Speed), 652.A35 (3 Speed)
SUPPLIER	Spiegel Inc., 1061 W. 35th St., Chicago 9, Ill.
TYPE SET	AC Operated Phono Amplifier With Manual Record Player
TUBES (Two)	Types 50L6GT Audio Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC - 60 Cycle RATING .25 Amp. @ 117 Volts AC

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PARTS LIST AND DESCRIPTIONS

AIRCASTLE MODEL 652.A25

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1A	Audio Output	50L6GT	50L6GT	7AC	
B	Audio Output	50A5GT	50A5GT	6AA	
C	Audio Output	50C5GT	50C5GT	7CV	
V2A	Rectifier	35Z5GT	35Z5GT	6AD	
B	Rectifier	35Y4GT	35Y4GT	5AL	
C	Rectifier	35W4GT	35W4GT	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	CE-1000	PRS150/40-30-20		EDL44215		TVA-3448	Filter (Red)
B	40	150							Filter (Blue)
C	20	150							Output Cathode (Green)
C2	.05	400	CP-503-4	P488-05	DF-503	PTE4S5		4TM-S5	Line Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	VC1005	Q13-133	AG-60-Z	B-60-S	Volume Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	Not Req.	Attach to R1A per instructions

RESISTORS

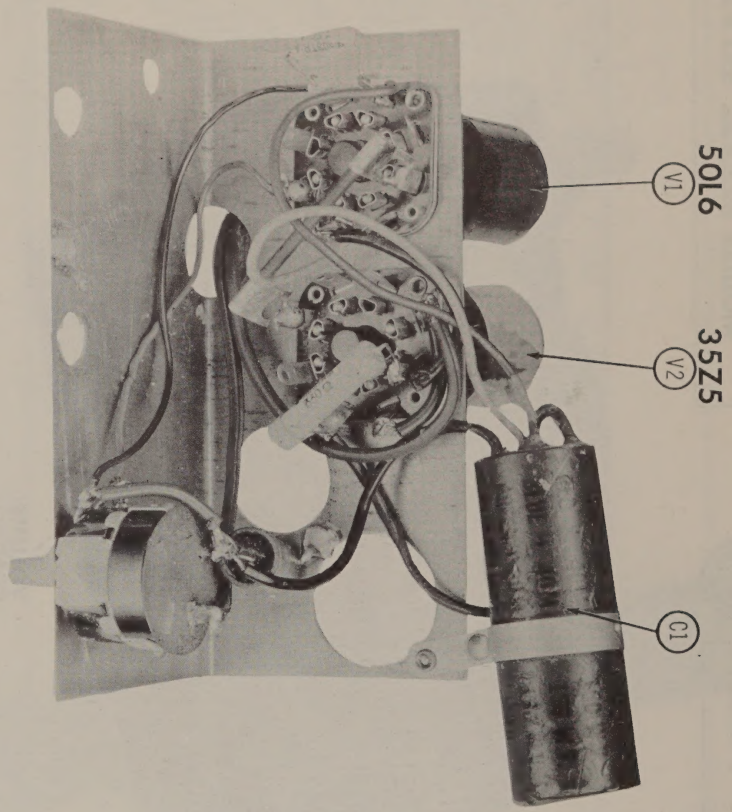
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	200Ω	10			Filament Dropping -Wire wound - See note
R3	150Ω	½	RC-151	BTS-150	Output Cathode
R4	330Ω	1	RC-331	BTA-330	Filter

Note: Some models use a 220Ω resistor in this application (Part #RW-221)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2KΩ	3.5Ω	180Ω	.5Ω	Part of Speaker	A-3332	A-3025	R0-2 ①	① Drill new mtg. holes

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P M	3.5Ω	SP-40		4A07	
	CONE DIA.	V. C. DIA.				
SP1B	4"	9/16"				

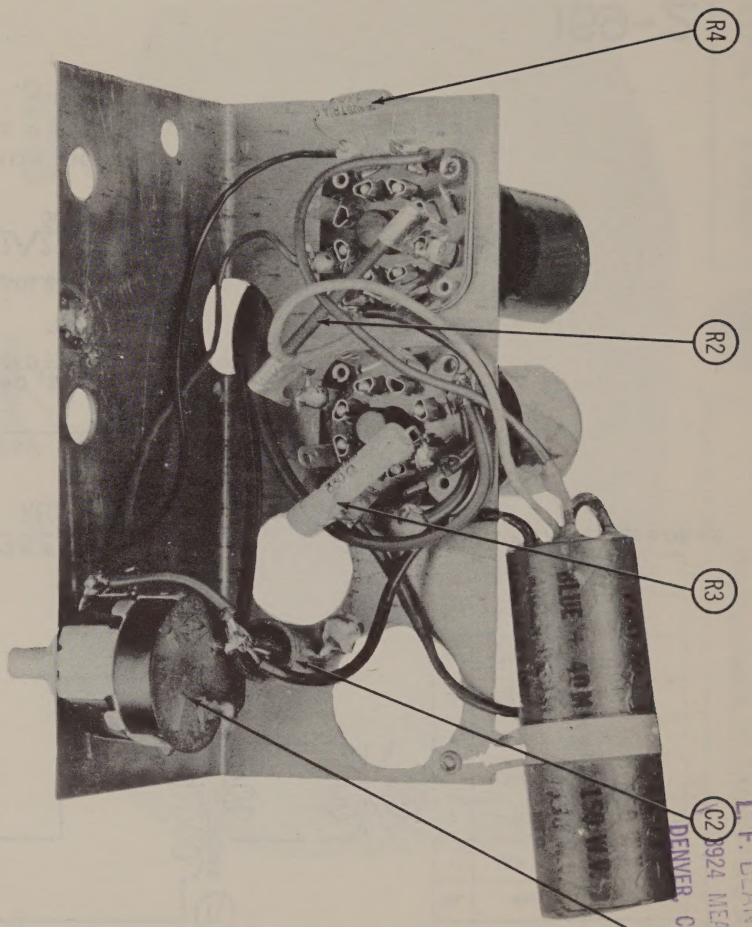
PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA							REMARKS
	AIRCASTLE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	T9AC8 † T1AC9 *					†25H60		† Complete Tone arm assembly for model 652.A25 * Tone arm for model 652.A35

MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
	Motor	M0-801	Model 652.A25
	Motor	M0-803	Model 652.A35
	Turn Table	TT-801	Model 652.A25
	Turn Table	TT-803	Model 652.A35

CHASSIS—BOTTOM VIEW

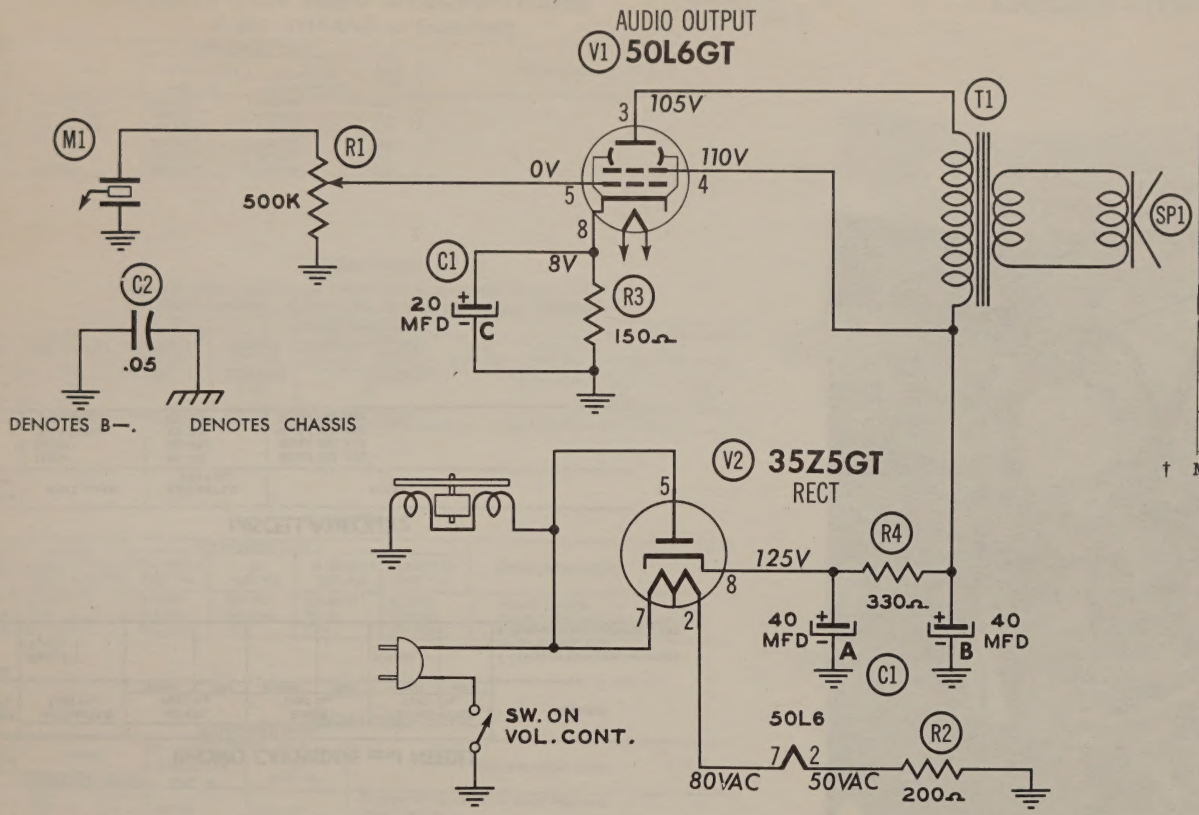


PROPERTY OF
L. F. CLARKENSHIRE
1924 MEADE
DENVER COLORADO

AIRCASTLE
MODEL 652.A25

SET 169 FOLDER 2

AIRCASTLE
MODEL 652.A25



Pin No.	50L6GT Res.	35Z5GT Res.
1	INF	INF
2	50Ω	270Ω
3	†510Ω	287Ω
4	†330Ω	INF
5	0Ω	305Ω
6	INF	†330Ω
7	0Ω	305Ω
8	150Ω	65KΩ

† MEASURED FROM PIN 8 OF V2

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1 - DC Voltage measurements are at 20,000 ohms per volt, AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Proper output load connected.

AIRLINE MODELS 15GSL-1564A, B, 15GSL-1565A, B, 15GSL-1566A, B, 15GSL-1567A, B

PROPERTY OF
L. F. BLANKENSHIP
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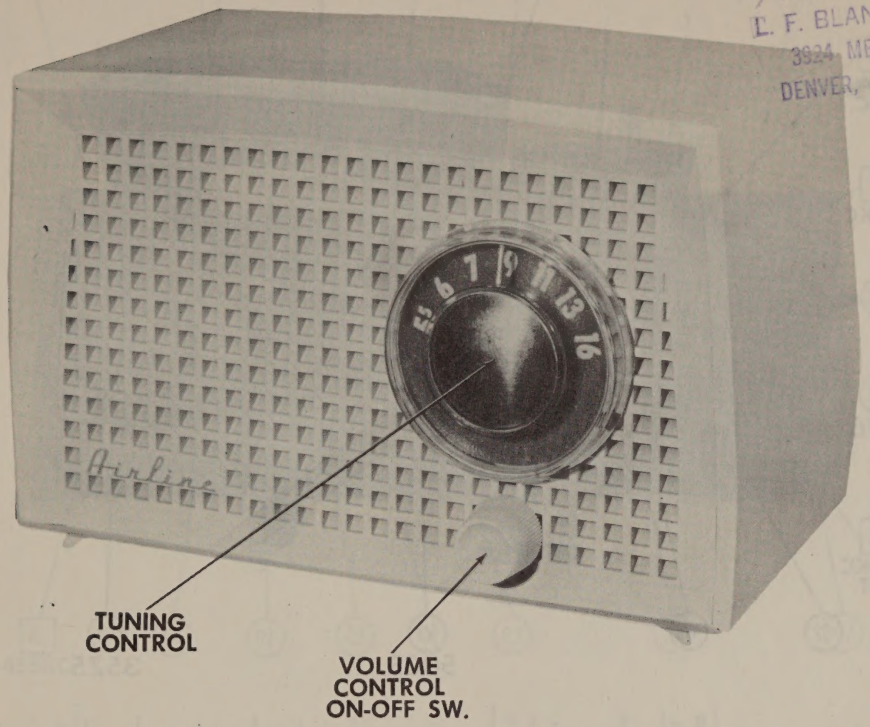
AIRLINE MODELS 15GSL-1564A, B, 15GSL-1565A, B, 15GSL-1566A, B, 15GSL-1567A, B



AIRLINE MODELS 15GSL-1564A, B, 15GSL-1565A, B, 15GSL-1566A, B, 15GSL-1567A, B

TRADE NAME	Airline Models 15GSL-1564A, B, 15GSL-1565A, B, 15GSL-1566A, B, 15GSL-1567A, B
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	AC-DC Operated AM Superheterodyne Receiver
TUBES (Four)	Types 12AU6 Conv., 12AV6 Det.-AVC-AF Amp., 50C5 Audio Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC-DC RATING .22 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540 - 1620 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer place receiver chassis in cabinet and turn tuning gang fully closed. Set pointer at low frequency end of dial parallel to base of cabinet.
Use isolation transformer, if available. If not, connect a 1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to stator of rear section of tuning gang. Low side to B-	455 KC (400~ Mod.)	Point of non-interference near center of dial	Across voice coil	A1, A2	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	"	"	1620 KC	Tuning gang fully open	"	A3	Adjust for maximum output
3.	"	Loop	1400 KC	Tune for max. output	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

AIRLINE MODEL 15GSL-1564A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12AU6	12AU6	7BK	
V2	Det-AVC-AF Amp.	12AV6	12AV6	7BT	
V3	Audio Output	50C5	50C5	7CV	
V4	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	N-8442	PRS150/40-20-20		EDL4215C		TVA-3423	Filter (Blue)
B	20	150							Filter (Red)
C	20	15							Output Cathode (Green)
C2	50		N-6385	SI50	D6-500	TM5Q5	GP1K-500	5GA-Q5	RF Coupling
C3	100		N-6015	SI100	D6-101	TM5T1	GP1K-101	5GA-T1	Diode RF Filter
C4	.003	600	N-2063	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Audio Coupling
C5A	.005		♦N-8215		♦PC-71				Audio Coupling
B	250								AF Amp. Plate Bypass
C									Audio Output Grid
C6	.01	400	N-1344	P488-01	D6-103	PTE6S1	GP2-333-103	4TM-S1	Audio Output Plate
C7	.05	400	N-1346	P488-05	DF-503	PTE4S5		4TM-S5	Rectifier Plate
C8	.05	200	N-1345	P288-05	DF-503	PJ2S5		2TM-S5	Line isolation

♦ Items C5A, C5B, C5C, R4A, R4B are combined in one unit in some models.
When replacing items separately C5B and C5C should total 250MMF

CONTROLS

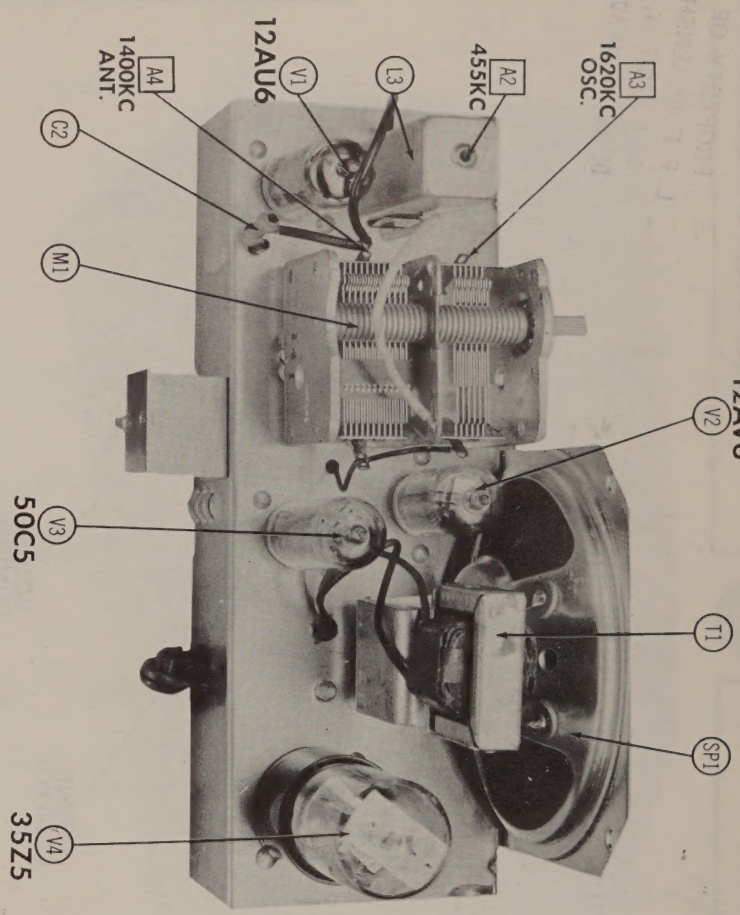
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2Meg	½	N-7142	Q13-139	AG-66-Z	AN-76	Volume Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	K-155	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	2.2Meg	½	N-4277		Osc. Grid
R3	6.8Meg	½	N-4028	BTS-6.8Meg	AF Amp. Grid
R4A	250KΩ	½	♦N-8215		AF Amp. Plate
B	500KΩ	½			Output Grid
R5	180Ω	½	N-4067	BTS-180	Output Cathode
R6	2200Ω	½	N-4896	BTS-2200	Filter
R7	33Ω	2	N-4022		Surge Limiter
R8	68Ω	2	N-6014		Filament Dropping

♦ Items R4A, R4B, C5A, C5B, C5C are combined in one unit.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.5KΩ	3.7Ω	255Ω	.6Ω	Part of Speaker	A-3332 ①	A-3025 ①	R0-2 ②	① Bend mtg. tabs down, file out slots and mount on original bracket ② Fabricate new mtg. bracket

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	AIRLINE PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P M	3.7Ω	7824	ST-113, Mod. P4-X	4A07 ①	① Remount output trans.
	CONE DIA.	V. C. DIA.				
SP1B	4"	9/16"				

COILS (RF-IF)

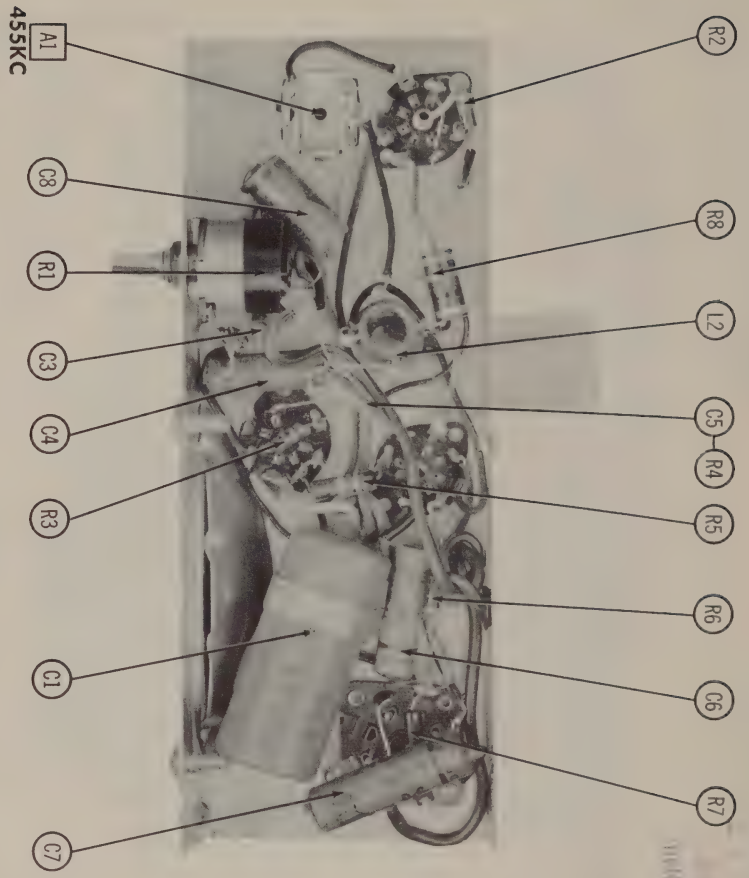
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIRLINE PART No.	MERIT PART No.	
L1	Loop Ant.	2Ω		N-8429		
L2	Osc. Coil	.8Ω	7.2Ω	N-7725 *		"A" Series Models COUPLING WINDING: 2.4Ω
L3	IF Trans.	29Ω	29Ω	N-7694		Tap ② .8Ω

* "B" Series Models use part #N-8552.

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M1	2Gang Var. Cap.	N-7141	(18-397MMF, 18-153MMF)
	Cabinet	#342	White, (Model 15GSL-1564A, B)
	Cabinet	#343	Walnut (Model 15GSL-1565A, B)
	Cabinet	#344	Red (Model 15GSL-1566A, B)
	Cabinet	#345	Light Green (Model 15GSL-1567A, B)
	Cabinet	#346	Dark Green (Model 15GSL-1567A, B)
	Cabinet	#347	Gray (Model 15GSL-1567A, B)
	Knob	N-8430	All models
	Knob	N-8431	White
	Knob	N-8432	Walnut
	Knob	N-8433	Red
	Knob	N-8434	Light Green
	Knob	N-8446	Dark Green
	Knob	N-8447	Gray

CHASSIS—BOTTOM VIEW

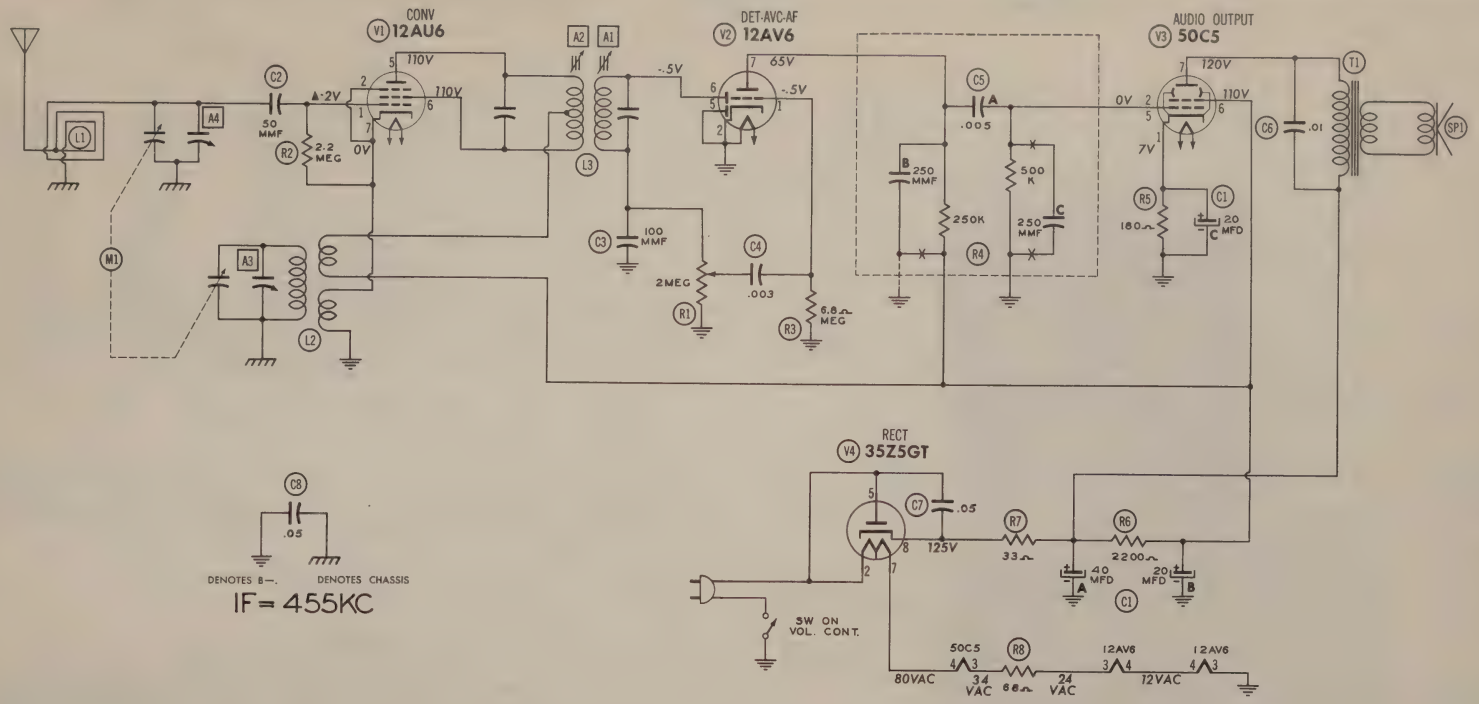


SET 169

FOLDER 3

AIRLINE MODEL 15GSL-1564A

AIRLINE MODEL 15GSL-1564A



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12AU6	2.2Meg	.8Ω	12Ω	24Ω	†2.2KΩ	†2.2KΩ	.8Ω	
V 2	12AV6	6.8Meg	0Ω	0Ω	12Ω	0Ω	2Meg	†250KΩ	
V 3	50C5	180Ω	500KΩ	92Ω	142Ω	500KΩ	†2.2KΩ	†288Ω	
V 4	35Z5GT	INF	177Ω	159Ω	INF	177Ω	†33Ω	142Ω	80KΩ

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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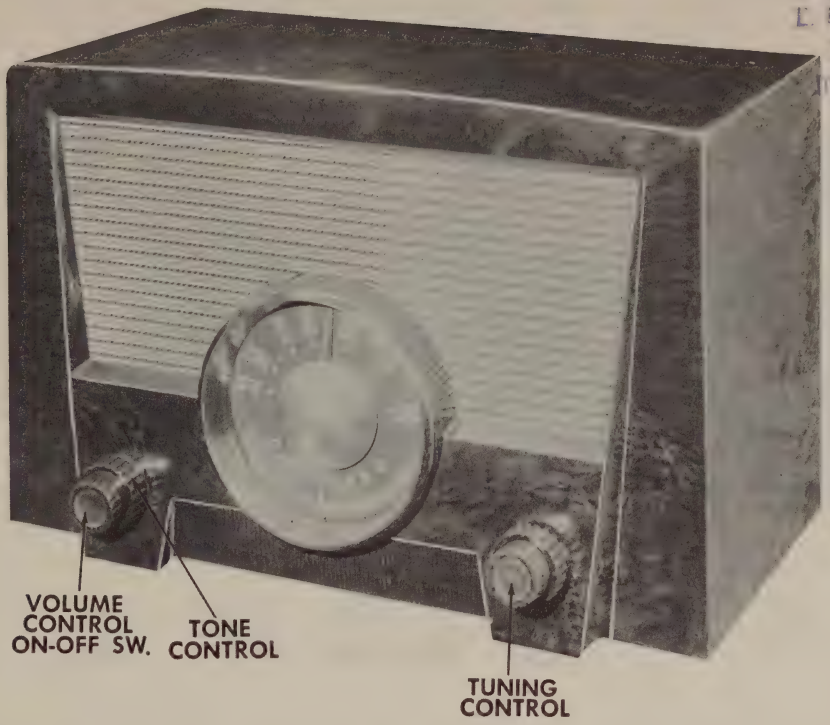
†MEASURED FROM PIN 8 of V4

▲ TAKEN WITH VACUUM TUBE VOLTMETER

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY O
L. F. SLAUREN
[illegible]

CORONADO
MODEL 15RA33-43-8365



CORONADO
MODEL 15RA33-43-8365

TRADE NAME	Coronado Model 15RA33-43-8365
SUPPLIER	Gamble - Skogmo, Inc., 15 N. 8th St., Minneapolis, Minn.
TYPE SET	AC Operated AM Superheterodyne Receiver
TUBES (SIX)	Types 6BA6 RF Amp., 6BE6 Conv., 6BA6 IF Amp., 6AV6 Det.-AVC-AF Amp., 6V6GT Audio Output, 6 X 4 Rectifier.
POWER SUPPLY	110-120 Volts AC — RATING .44 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1630KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn Radio-Phono switch at back of set to "Radio" position.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to stator of RF Section of tuning gang, M3. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output
2.	"	"	1630KC	"	"	A5	"
3.		Loop	1400KC	Tune to 1400KC Signal	"	A6, A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

With set aligned and in cabinet, turn tuning gang fully closed and set pointer parallel with base of cabinet.

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PARTS LIST AND DESCRIPTIONS

CORONADO
MODEL 15RA33-43-8365

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amplifier	6BA6	6BA6	7BK	
V4	Det.-AVC-AF Amp.	6AV6	6AV6	7BT	
V5	Audio Output	6V6GT	6V6GT	7AC	
V6	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	350	C20-T69	AFH4-57		UP22245C		TVL-4667	■ Filter
B	20	350							● Filter
C	20	350							▲ Decoupling
D	20	25							Audio Output Cathode
C2	.05	200	CO52	P288-05	DF-503	PJ2S5		2TM-S5	AVC Filter
C3	.05	200	CO52	P288-05	DF-503	PJ2S5		2TM-S5	AVC Filter
C4	.05	400	CO54	P488-05	DF-503	PTE4S5		4TM-S5	Decoupling
C5A	100		♦ CR1	SI100	♦ PC-50	TM5T1	GP1K-101	♦ 100C1	Diode RF Filter
B	100			SI100		TM5T1	GP1K-101		Diode RF Filter
C6	.005	600	C0056	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C7	250	500	C2505M	1468-00025	D6-251	5W5T25	GP2K-251	1FM-325	AF Amp. Plate Bypass
C8	.005	600	C0056	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Tone Comp.
C9	.02	600	C026	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C10	.005	600	C0056	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Output Plate
C11	.04	600				PJ6S4		5TM-S4	Line Filter †

† Some Models use .047MFD in this application (Part No. C0476M)
♦ Items C5A, C5B, R8 are combined in one unit

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Coronado PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg		VRT-69	*			Tone Control - Panel
B	1 Meg						Volume Control & SW - Rear

* CONCENTRIKIT EQUIVALENT - KIT K-2, SHAFT KIT K-2S, BASE ELEMENTS B13-137 (Panel), B13-137 (Rear) & SWITCH 76-1

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
R2	1800Ω	½	R182.5	BTS-1800	RF Amp. Cathode
R3	22KΩ	½	R223.5		Osc. Grid
R4	390Ω	½	R391.5	BTS-390	IF Amp. Cathode
R5	1Meg	½	R105.5	BTS-1Meg	AVC Network
R6	12KΩ	2	R1232	BTB-12K	Screen Dropping
R7	1Meg	½	R105.5	BTS-1Meg	AVC Network
R8	47KΩ	½	♦ CR1	BTS-47K	Diode Filter
R9	10Meg	½	R106.5	BTS-10Meg	AF Amp. Grid
R10	470KΩ	½	R474.5	BTS-470K	AF Amp. Plate
R11	470KΩ	½	R474.5	BTS-470K	Output Grid
R12	330Ω	1	R3311	BTA-330	Output Cathode
R13	1000Ω	1	R1021	BTA-1000	Filter
R14	470Ω	1	R4711	BTA-470	Filter

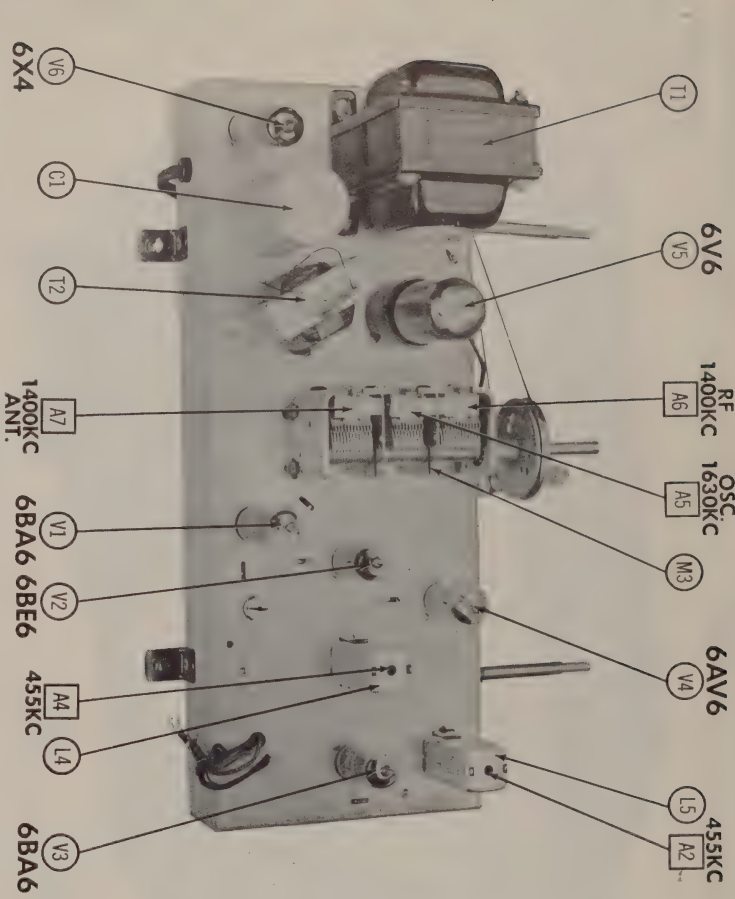
♦ Items R8, C5A, C5B are combined in one unit

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CORONADO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ .440A	500VCT .063A	6.3VAC 2.25A		XL-60	PC-8419 ①	P-3148 ①	PV-60 ①

① Drill New Mounting Holes

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CORONADO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	4.7KΩ	3.6Ω	400Ω	.5Ω	L3595	A-3849	A-3019	R0-8 ②	② Drill One New Mounting Hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	CORONADO PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P.M.	3.6Ω	SPKT-69		57A1	
	CONE DIA.	V. C. DIA.				
SP1B	5"x 7"	9/16"				

COILS (RF-IF)

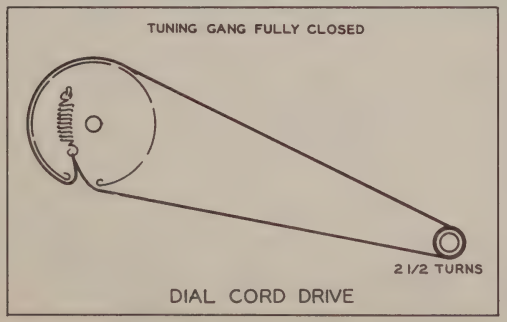
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	CORONADO PART No.	MERIT PART No.	
L1	Loop Ant.	.2Ω		LAT69		
L2	RF Coil	28Ω	2.8Ω	LRT69	BC-382	
L3	Osc. Coil	7.4Ω		T64L0		Tap④ .6Ω
L4	Input IF	16.5Ω	16.5Ω	T111-31-A	BC-352	
L5	Output IF	16.5Ω	16.5	T111-31-A	BC-353	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					CORONADO PART No.		
M1	Bayonet	6-8	.15	Brown			Type #47

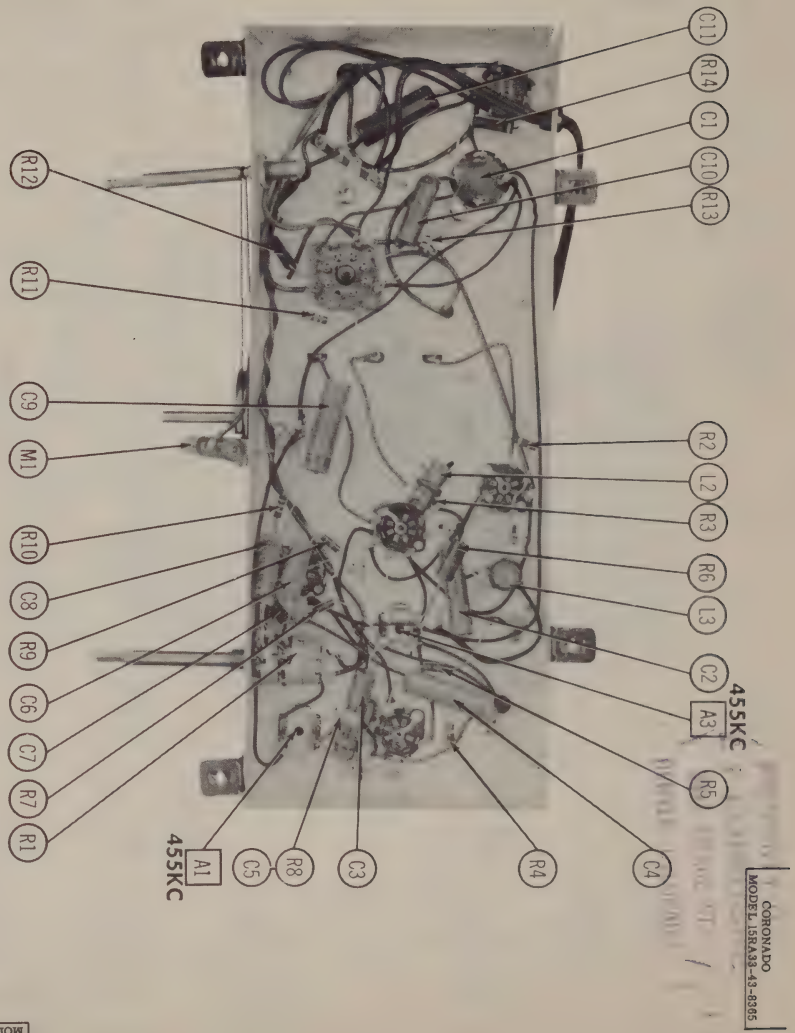
MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M2	Switch	SS-3	Radio - Phono
M3	3 gang Var. Cap.	VCT69	(32-459MMF, 35-449MMF, 31-215MMF)
	Cabinet	P-1901	
	Dial Scale	P-1906	
	Pointer	P-1904	
	Knob	P-1902	Round Hub
	Knob	P-1903	Round Insert



DIAL CORD DRIVE

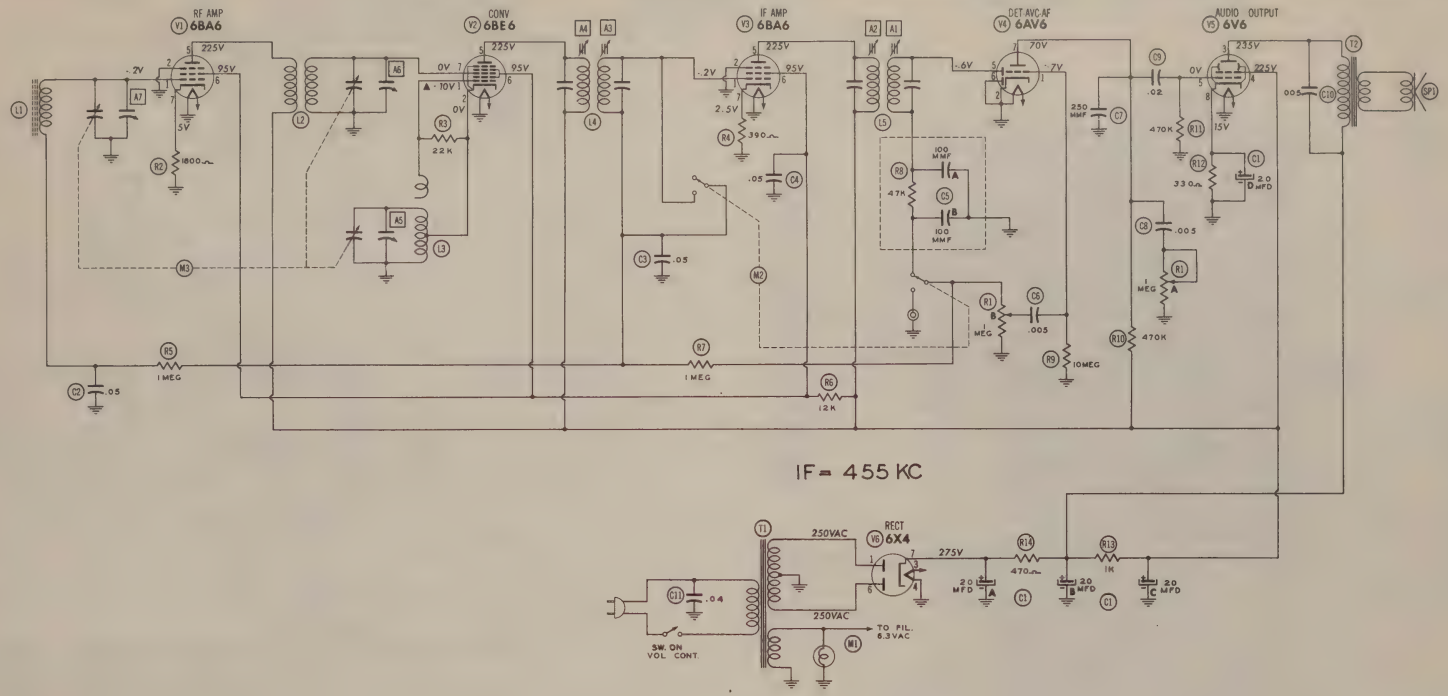
CHASSIS—BOTTOM VIEW



SET 169 FOLDER 4

CORONADO MODEL 15RA33-43-8365

CORONADO MODEL 15RA33-43-8365



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	3Meg	0Ω	.1Ω	0Ω	†1.4KΩ	†13KΩ	1.8KΩ	
V 2	6BE6	22KΩ	.6Ω	0Ω	.1Ω	†1.4KΩ	†13KΩ	2.8Ω	
V 3	6BA6	2Meg	0Ω	0Ω	.1Ω	†1.4KΩ	†13KΩ	390Ω	
V 4	6AV6	10Meg	0Ω	0Ω	.1Ω	1Meg	0Ω	†470KΩ	
V 5	6V6GT	INF	.1Ω	†870Ω	†1.4KΩ	470KΩ	0Ω	0Ω	330Ω
V 6	6X4	130Ω	INF	0Ω	.1Ω	INF	125Ω	4KΩ	

ALL MEASUREMENTS TAKEN IN RADIO POSITION
† MEASURED FROM PIN 7 OF V6
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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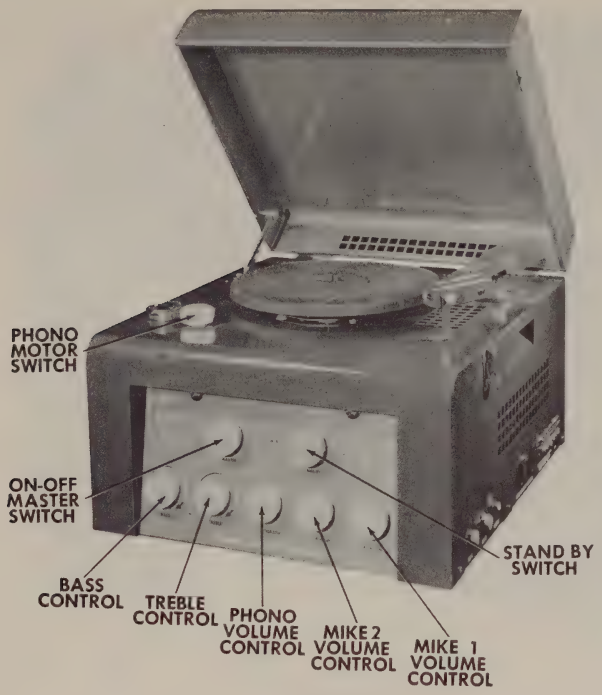
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DAVID BOGEN MODEL HX-632

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

DAVID BOGEN
MODEL HX-632



DAVID BOGEN
MODEL HX-632

TRADE NAME	David Bogen Model HX-632
MANUFACTURER	David Bogen Co., Inc., 663 Broadway, New York, 12, N. Y.
TYPE SET	AC or Battery Operated Three Channel Audio Amplifier with Manual Record Player
TUBES (SEVEN)	Types 6SF5 Mic. 1 Pre Amp., 6SF5 Mic. 2 Pre Amp., 6SL7GT 1st. AF Amp., 6SL7GT 2nd. AF Amp., (2) 6L6G Audio Output, 5U4G Rectifier.
POWER SUPPLY	110-120 Volts AC or 6 Volts DC RATING 1.2 Amp.Ⓐ 117 Volts AC or 24 Amp. Ⓐ6.3 Volts DC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1952 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Mic.1 Pre Amp.	6SF5	6SF5	6AB	
V2	Mic.2 Pre Amp.	6SF5	6SF5	6AB	
V3	1st.AF Amplifier	6SL7GT	6SL7GT	8BD	
V4	2nd.AF Amplifier	6SL7GT	6SL7GT	8BD	
V5	Audio Output	6L6G	6L6G	7AC	
V6	Audio Output	6L6G	6L6G	7AC	
V7	Rectifier	5U4G	5U4G	5T	

CAPACITORS

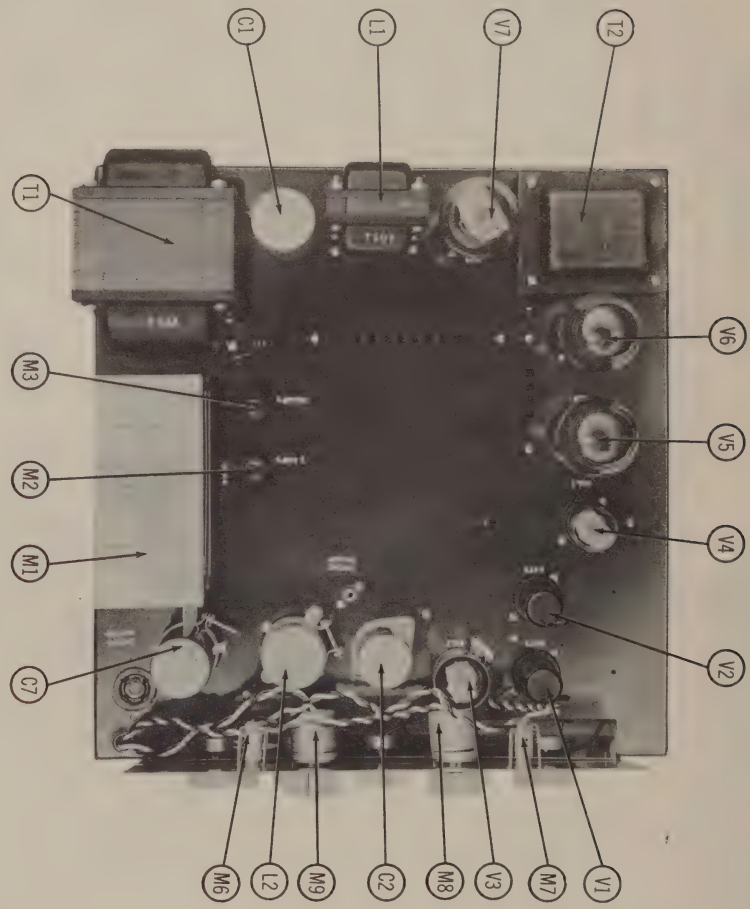
Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DAVID BOGEN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	8	500		PRS500/8		EB10018			Filter (Red)
B	8	500		PRS500/8					Filter (Blue)
C2A	5	450		AFH4-09		UP5Q45		TVL-4830	■ Audio Output Screen
B	5	450							▲ 2nd. AF Amp. Plate
C	5	450							1st. AF Amp. Plate
D	5	450							▲ Mic. Preamp. Dec.
C3	50	50		PRS50/50		BR505		TVA-1308	Audio Output Cathode
C4	50	50		PRS50/50		BR505		TVA-1308	Fil. Bypass
C5	50	50		PRS50/50		BR505		TVA-1308	Fil. Bypass
C6	50	50		PRS50/50		BR505		TVA-1308	Vibrator Spark Supp.
C7	3	220VAC		RRF		CRA2030		0P-1203	Phono Motor Filter
C8	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C9	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C10	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C11	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C12	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C13	.25	200		P488-25		PJ2P25		2TM-P25	Tone Comp.
C14	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Tone Comp.
C15	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Tone Comp.
C16	.003	600		P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Tone Comp.
C17	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	Audio Coupling
C18	5	500		1469-000005		5R5V5		MS-55	Tone Comp.
C19	5	500		1469-000005		5R5V5		MS-55	Tone Comp.
C20	.1	400		P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C21	5	500		1469-000005		5R5V5		MS-55	Tone Comp.
C22	.1	400		P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C23	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Tone Comp.
C24	.04	2400							Buffer Cap.
C25	.1	400		489ZGXY		PJ4P1		4TM-P1	Line Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DAVID BOGEN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	V-202B	Q13-133	AG-60-Z	B-60	Microphone #1 Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions
R2A	500KΩ	½	V-202B	Q13-133	AG-60-Z	B-60	Microphone #2 Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R2A per instructions
R3A	500KΩ	½	V-202B	Q13-133	AG-60-Z	B-60	Phonograph Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R3A per instructions
R4A	500KΩ	½	V-284	Q13-133	AG-60-Z	B-60	Bass Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R4A per instructions
R5A	500KΩ	½	V-284	Q13-133	AG-60-Z	G-60	Treble Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R5A per instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA: DAVID BOGAN PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
	RESISTANCE	WATTS			
R6	2.2Meg	½		BTS-2.2Meg	Mic. 1 Pre Amp. Grid
R7	2.2Meg	½		BTS-2.2Meg	Mic. 1 Pre Amp. Plate
R8	2.2Meg	½		BTS-2.2Meg	Mic. 2 Pre Amp. Grid
R9	2.2Meg	½		BTS-2.2Meg	Mic. 2 Pre Amp. Plate
R10	1.5Meg	½		BTS-1.5Meg	Isolation
R11	220KΩ	½		BTS-220K	Isolation
R12	220KΩ	½		BTS-220K	Isolation
R13	2200Ω	½		BTS-2200	1st. AF Amp. Cathode
R14	100KΩ	½		BTS-100K	1st. AF Amp. Plate
R15	220KΩ	½		BTS-220K	1st. AF Amp. Grid
R16	100KΩ	½		BTS-100K	Decoupling
R17	220KΩ	½		BTS-220K	1st. AF Amp. Grid
R18	47KΩ	½		BTS-47K	1st. AF Amp. Grid
R19	2200Ω	½		BTS-2200	1st. AF Amp. Cathode
R20	150KΩ	½		BTS-150K	1st. AF Amp. Plate
R21	3300Ω	½		BTS-3300	Tone Compensation
R22	470KΩ	½		BTS-470K	2nd. AF Amp. Grid
R23	33KΩ	½		BTS-33K	2nd. AF Amp. Grid
R24	1500Ω	½		BTS-1500	2nd. AF Amp. Cathode
R25	220KΩ	½		BTS-220K	2nd. AF Amp. Plate
R26	220KΩ	½		BTS-220K	Phase Inv. Plate
R27	3300Ω	½		BTS-3300	Phase Inv. Grid
R28	100KΩ	½		BTS-100K	Output Grid
R29	270KΩ	½		BTS-270K	Feedback Network
R30	100KΩ	½		BTS-100K	Output Grid
R31	200Ω	9		1 3/4A-200	Output Cathode - Wire Wound
R32	4700Ω	½		BTS-4700	Decoupling
R33	47KΩ	½		BTS-47K	Decoupling
R34	2200Ω	½		BTS-2200	Hum Balance
R35	2200Ω	½		BTS-2200	Hum Balance
R36A	3000Ω	10			Filter - Wire Wound
B	20KΩ	10			Bleeder - Wire Wound
R37	10Ω				Parasitic Suppressor

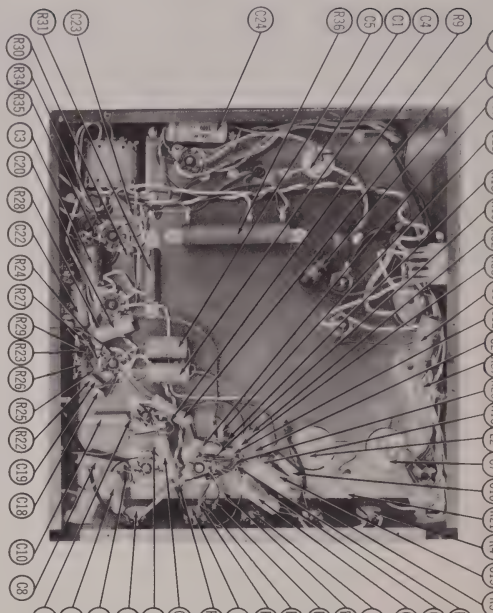
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
	PRI.	SEC. 1	SEC. 2	SEC. 3				
T1	117VAC @1.5A	740VCT .150ADC	5VAC @3.0A	6.3VAC @3.5A or 6.3VDC @20A.	T-322			

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T2	6.4KΩ CT	500Ω 16Ω 15Ω 8Ω 4Ω	110Ω CT	12Ω . 7Ω .4Ω .3Ω .2Ω	T-261	A-3801 ①	A-3130 ①	PSO-200 ①	① Drill New Mounting Holes

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE @ CURRENT 1000 ν⁄	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
L1	.150ADC	80Ω	4 Henries	T-404C	C-1410 ①		R-7150 ①	① Drill New Mounting Holes

TONE CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE @ CURRENT 1000 ν⁄	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
L2		685Ω	.015 Henries	T550				

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: RADIART PART No.	INSTALLATION NOTES
M1	Interrupter	6.3	60~	H504			

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: DAVID BOGEN PART No. FUSE	DAVID BOGEN PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M2	AGC	2A.250V			312002 (3AG-2A.)	342001	AGC2	HCM
M3	AGC	30A.32V			311030 (3AG-30A.)	342001	AGC30	HCM

PARTS LIST AND DESCRIPTIONS (Continued)

PHONO CARTRIDGE

ITEM No.	David Bogen PART No.	REPLACEMENT DATA: ASTATIC PART No. CARTRIDGE	ASTATIC NEEDLE	SHURE PART No. CARTRIDGE	SHURE NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE NEEDLE	REMARKS
M4		B-2	*AB-8M			*24H60		* Complete Assby.

ASTATIC, AND ELECTRO-VOICE NEEDLE LISTING SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

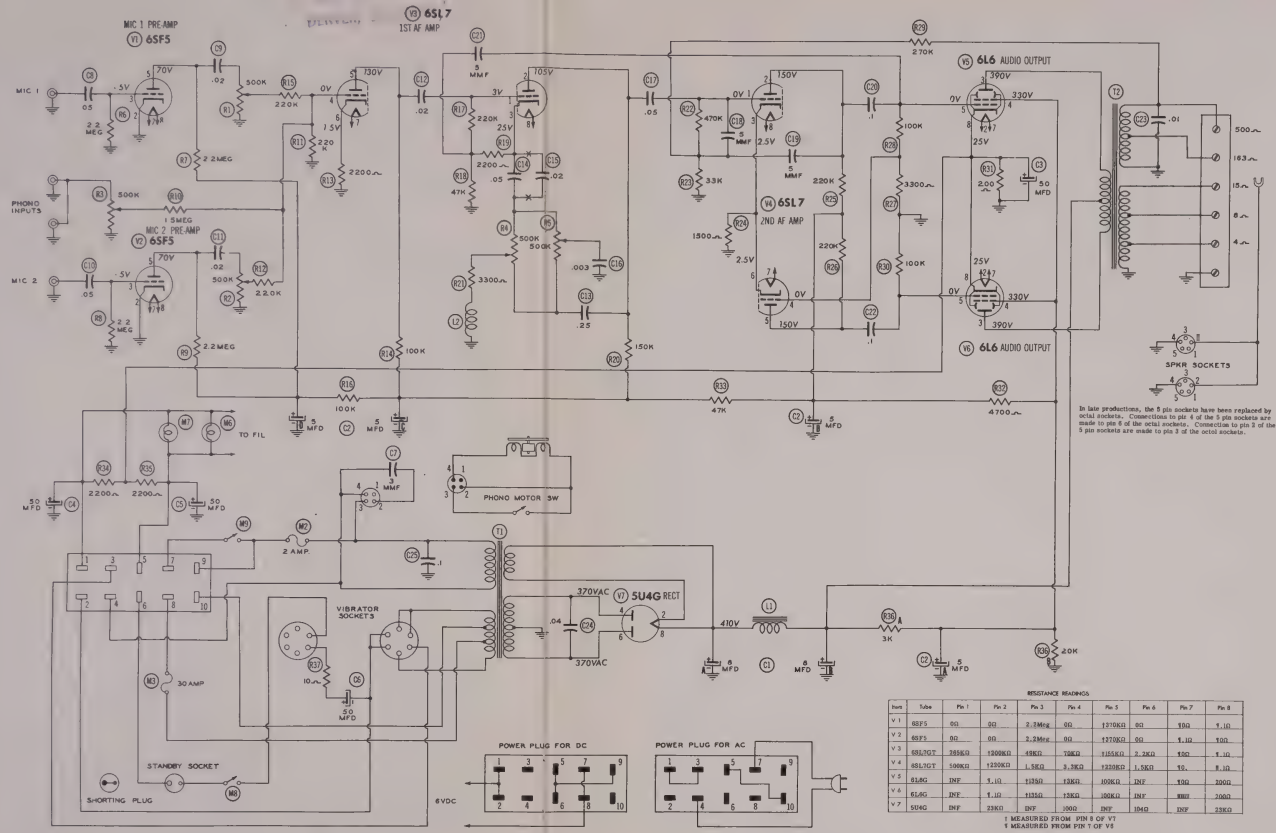
ITEM No.	REPLACEMENT DATA: DAVID BOGEN PART No.	REPLACEMENT DATA: WALCO PART No.	JENSEN PART No.	REMARKS
M5		Optional	Optional	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: DAVID BOGEN PART No.		NOTES
M6	Bayonet	6-8	.15	Brown			Type #47
M7	Bayonet	6-8	.15	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	DAVID BOGEN PART No.	NOTES
M8	Switch		Stand-By
M9	Switch		Master



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SF5	0Ω	0Ω	2.2Meg	0Ω	†370KΩ	0Ω	1ΩΩ	1.1Ω
V 2	6SF5	0Ω	0Ω	2.2Meg	0Ω	†370KΩ	0Ω	1.1Ω	1ΩΩ
V 3	6SL7GT	265KΩ	†200KΩ	49KΩ	72KΩ	†155KΩ	2.2KΩ	1ΩΩ	1.1Ω
V 4	6SL7GT	190KΩ	†220KΩ	1.5KΩ	3.3KΩ	†230KΩ	1.5KΩ	1Ω.	1.1Ω
V 5	6L6G	INF	1.1Ω	†375Ω	12KΩ	102KΩ	INF	1ΩΩ	200Ω
V 6	6L6G	INF	1.1Ω	†375Ω	12KΩ	100KΩ	INF	MM	200Ω
V 7	5U4G	INF	23KΩ	INF	200Ω	INF	104Ω	INF	23KΩ

† MEASURED FROM PIN 8 OF V7
‡ MEASURED FROM PIN 7 OF V8

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1 - DC Voltage measurements are at 20,000 ohms per volt, AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3.- Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PHOTOFACT* Folder

EMERSON
MODELS 700B, 701B, (Ch. 120153-B)

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MODEL 700B

EMERSON
MODELS 700B, 701B, (Ch. 120153-B)

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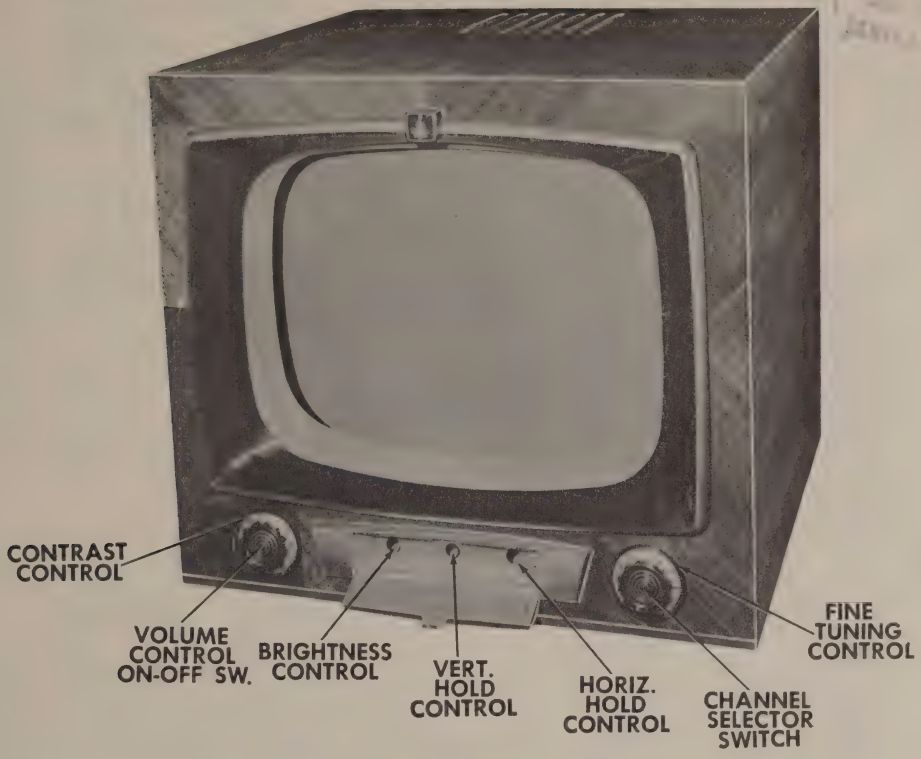
DATE 6-52 SET 169 FOLDER 6

EMERSON
MODELS 700B, 701B, (Ch. 120153-B)



EMERSON
MODELS 700B, 701B, (Ch. 120153-B)

EMERSON MODEL 700B

TRADE NAME	Emerson Models 700B, 701B (Ch. 120153-B)
MANUFACTURER	Emerson Radio & Phono Corp., 111 8th Ave., New York, N. Y.
TYPE SET	Television Receiver
TUBES	Twenty-Three

POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.65 Amp. @ 117 Volts AC
TUNING RANGE—Channels 2 thru 13

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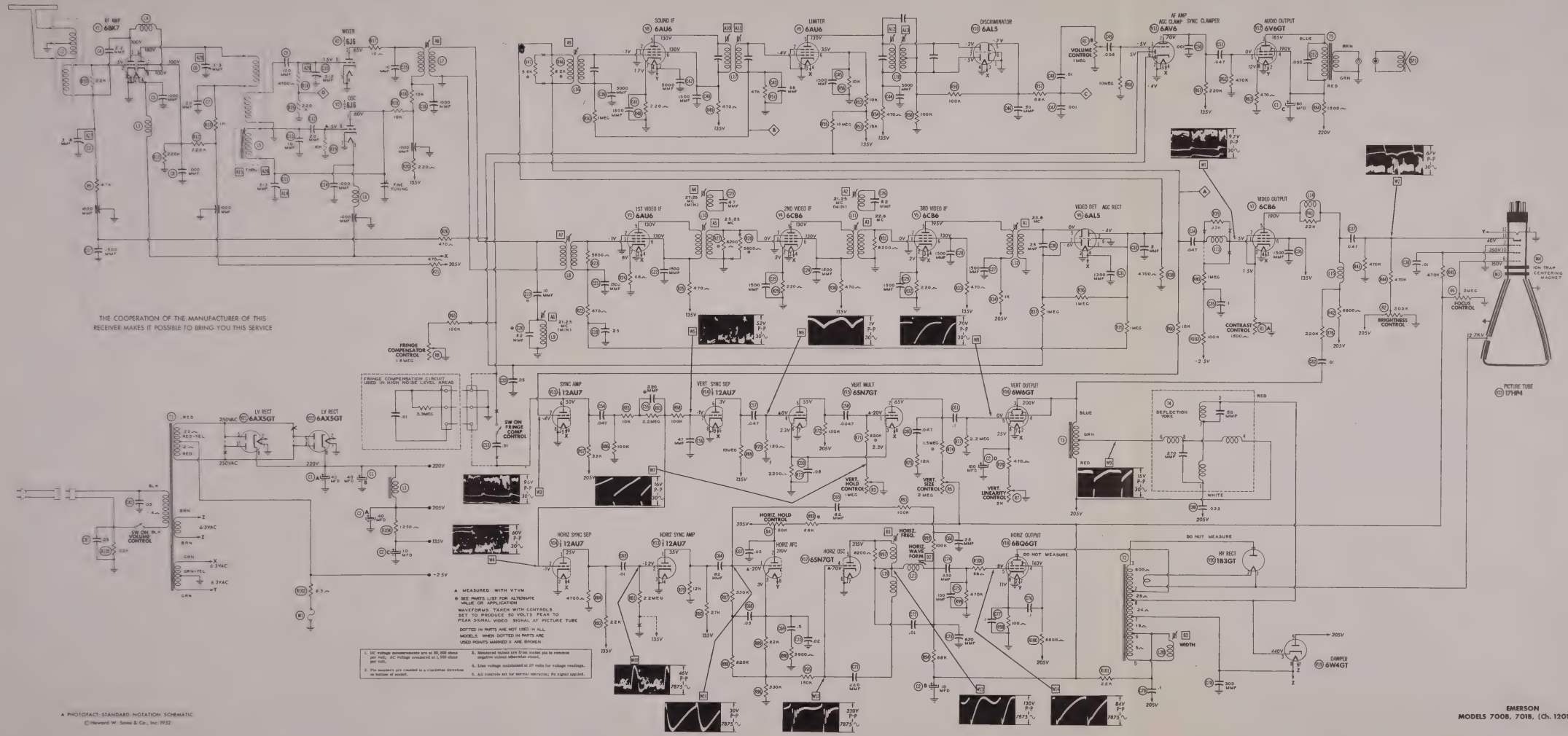
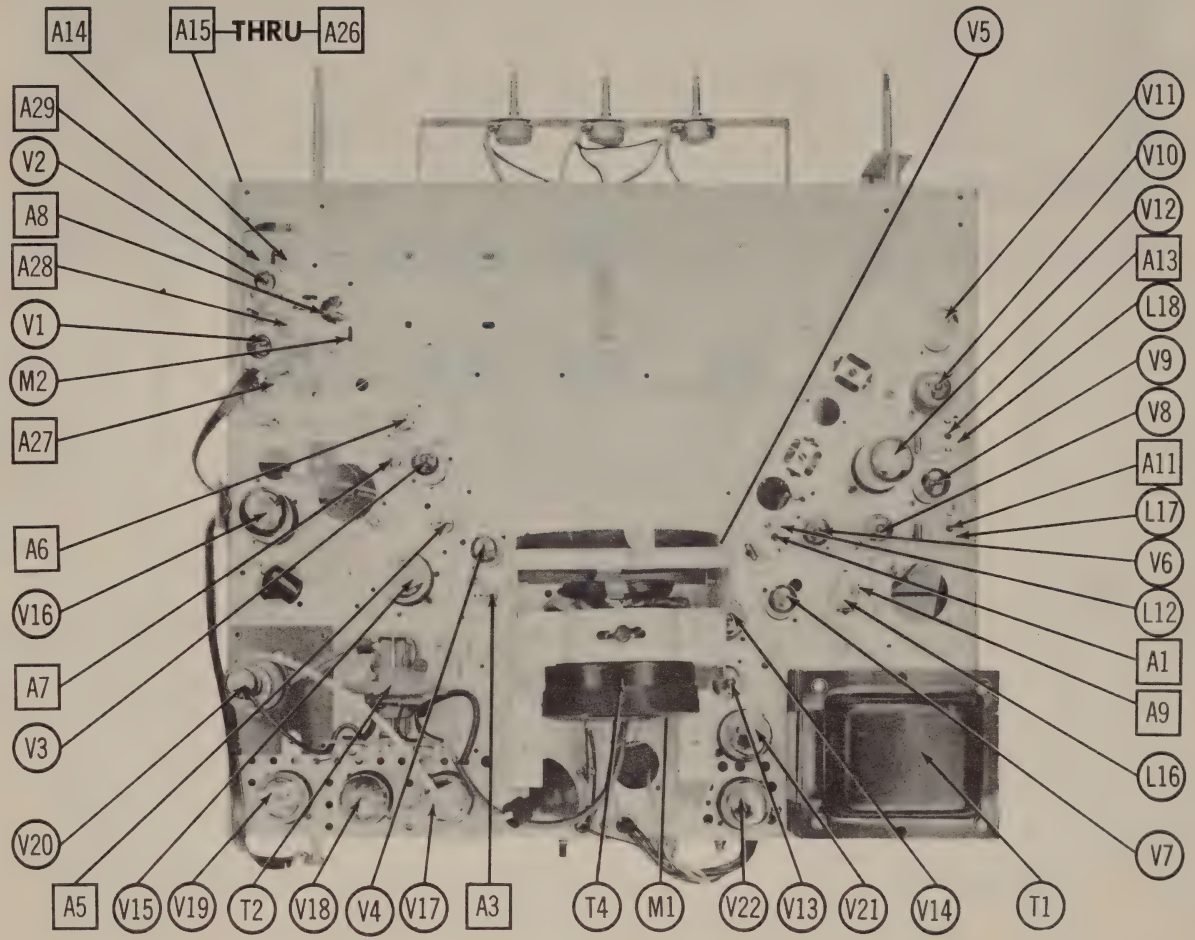
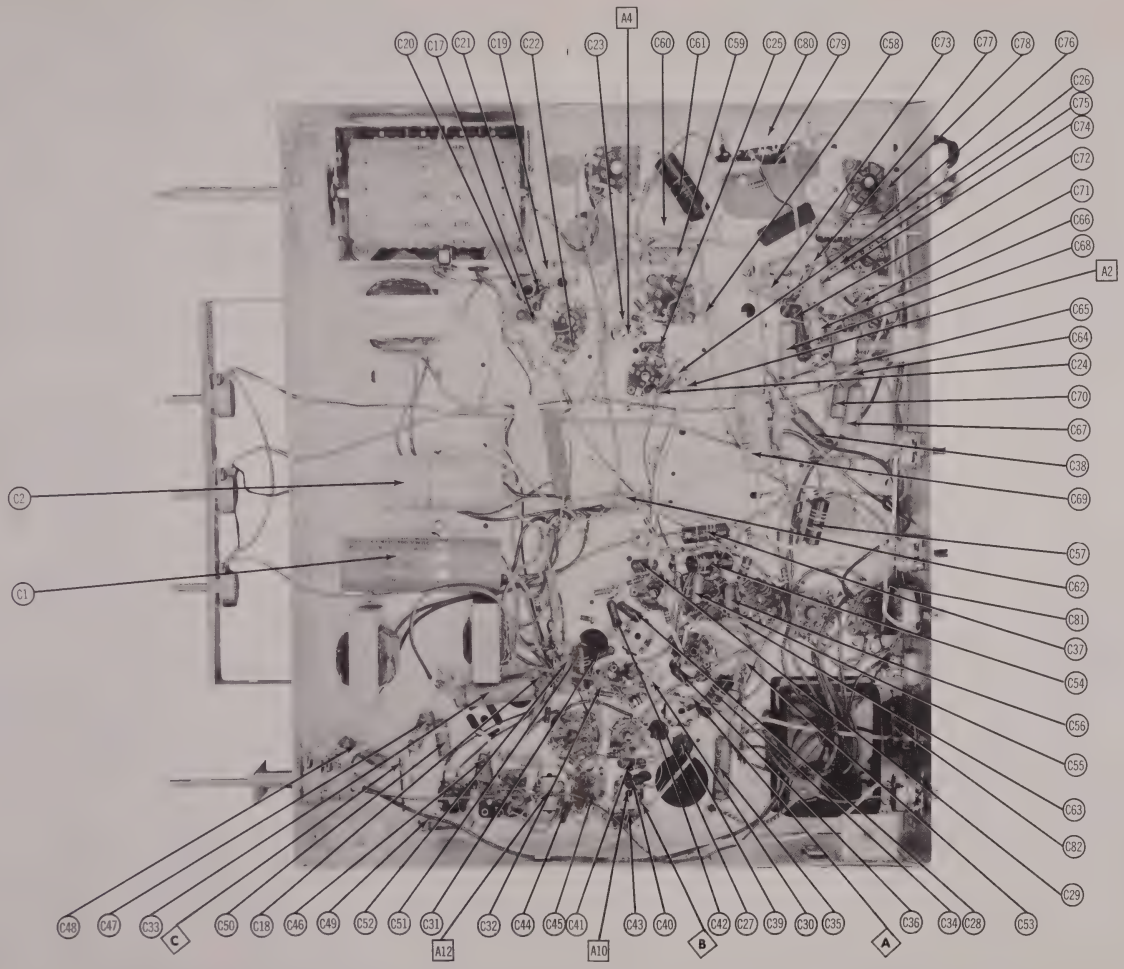


EMERSON
MODELS 7008, 7018, (Ch. 120153-B)

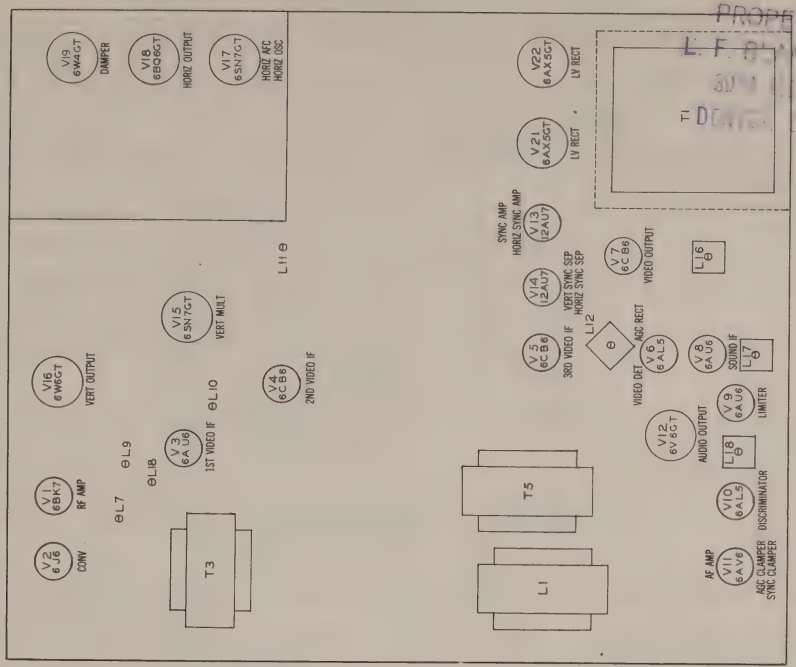


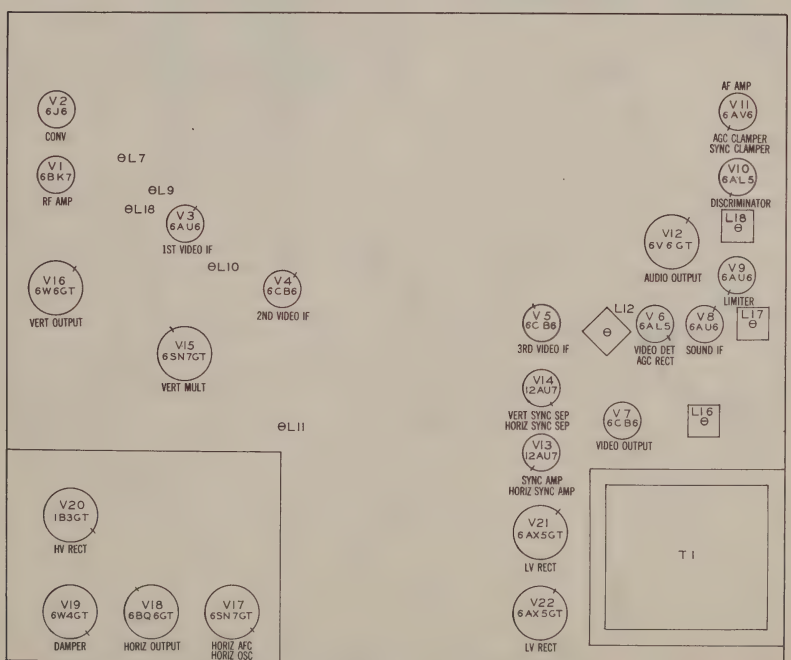
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF
L. F. P[illegible] TOWNSHIP
30[illegible] ST.
T[illegible] DE[illegible] COLORADO





TOP VIEW

TUBE PLACEMENT CHART

EMERSON

MODELS 700B, 701B, (Ch. 120153-B)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal oscillator tube, V17 from its socket.

VIDEO IF ALIGNMENT

Remove the 6J6 converter tube, V2, and replace with a 6J6 from which pin 1 has been clipped. This will disable the oscillator and reduce the possibility of erroneous readings.
Connect the negative terminal of a 3 volt bias battery to the ungrounded side of C18 and the positive terminal to the chassis.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.001MFD	High side to Pin 1 (grid) of 6AU6 (V3). Low side to chassis.	Not used	23.8MC	Any	Use VTVM DC probe to Point (A) Common to chassis.	A1	Adjust for maximum deflection
2.	"	"	"	21.25MC	"	"	A2	Adjust for MINIMUM deflection
3.	"	"	"	22.8MC	"	"	A3	Adjust for maximum deflection Repeat Step 2.
4.	"	"	"	27.25MC	"	"	A4	Adjust for MINIMUM deflection
5.	"	"	"	25.25MC	"	"	A5	Adjust for maximum deflection Repeat Step 4.
6.	"	"	24MC (10MC swp.)	25.75MC 22.25MC 21.25MC	"	Vertical amp. input of scope thru 10KΩ Resistor to Point (A) Low side to chassis.	A5, A3 A1	Adjust for response curve similar to Fig. 1.
7.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	Not used	21.25MC	"	Use VTVM DC probe to Point (A) Common to chassis.	A6	Adjust for MINIMUM deflection
8.	"	"	24MC (10MC swp.)	25.75MC 22.50MC	"	Vert. amp. thru detector probe, (Fig. 2) to Pin 5 (plate) of 6AU6 (V3). Low side to chassis.	A7, A8	Adjust for response curve similar to Fig. 3.
9.	"	"	"	"	"	Connect scope as in Step 6.		Check for response curve similar to Fig. 1. If necessary retouch A1, A3 and A5 for proper response.

SOUND IF ALIGNMENT

This receiver employs one of two discriminator transformers.
On transformer #708018 (A13) the secondary is on top, and the primary (A12) is on the bottom. On transformer #708017 the secondary is on the bottom and the primary is on top. Check the number on the transformer and proceed accordingly.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.01MFD	High side to Pin 2 (plate) of 6AL5 (V6). Low side to chassis.	Not used	4.5MC	Any	Use VTVM DC probe to Point (B) Common to chassis.	A9, A10 A11	Adjust for maximum deflection. Adjust generator to produce 1 volt at Point (B)
11.	"	"	4.5MC (450KC swp.)	4.5MC	"	Vert. amp. thru 10KΩ resistor to Point (C) Low side to chassis.	A12, A13	Adjust A12 for maximum amplitude and linearity of "S" curve, Fig. 4. Adjust A13 to place 4.5MC marker at center of "S" curve.

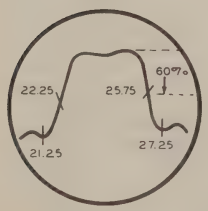


FIG. 1

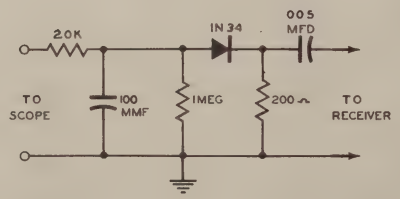


FIG. 2

FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket. Adjust the overall adjustment screw, (A14), so that the top of the screw is 3/8" above the top surface of the tuner.
Turn the fine tuning control to the mid-position of its range (tooth on cam pointing straight down).
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point (A) Low side to chassis.	A15	Adjust to place sound marker in trap notch as shown in Fig. 5. The video marker should fall between 55 and 60%.
			213MC (10MC swp.)	211.25MC 215.75MC	13		A16	
			201MC (10MC swp.)	199.25MC 203.75MC	11		A17	
			195MC (10MC swp.)	193.25MC 197.75MC	10		A18	
			189MC (10MC swp.)	187.25MC 191.75MC	9		A19	
			183MC (10MC swp.)	181.25MC 185.75MC	8		A20	
			177MC (10MC swp.)	175.25MC 179.75MC	7		A21	
			85MC (10MC swp.)	83.25MC 87.75MC	6		A22	
			79MC (10MC swp.)	77.25MC 81.75MC	5		A23	
			69MC (10MC swp.)	67.25MC 71.75MC	4		A24	
			63MC (10MC swp.)	61.25MC 65.75MC	3		A25	
			57MC (10MC swp	55.25MC 59.75MC	2		A26	

RF & MIXER ADJUSTMENTS

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC swp.)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to Point (D) Low side to chassis.	A27, A28 A29	Adjust for response curve similar to Fig. 6 with markers above 90%.
14.	"	"	213MC (10MC swp.)	211.25MC 215.75MC	13	"		Check all channels for response curve similar to Fig. 6. If markers fall below 70% on any channel make slight compromise adjustment of A27, A28 and A29 with channel switch set for that channel. Recheck all channels to see that they have not been seriously affected.
			201MC (10MC swp.)	199.25MC 203.75MC	11			
			195MC (10MC swp.)	193.25MC 197.75MC	10			
			189MC (10MC swp.)	187.25MC 191.75MC	9			
			183MC (10MC swp.)	181.25MC 185.75MC	8			
			177MC (10MC swp.)	175.25MC 179.75MC	7			
			85MC (10MC swp.)	83.25MC 87.25MC	6			
			79MC (10MC swp.)	77.25MC 81.75MC	5			
			69MC (10MC swp.	67.25MC 71.75MC	4			
			63MC (10MC swp.)	61.25MC 65.75MC	3			
			57MC (10MC swp.)	55.25MC 59.75MC	2			

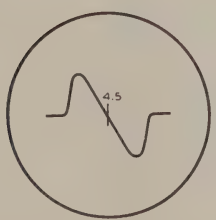


FIG.4

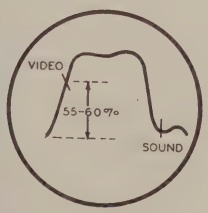


FIG.5

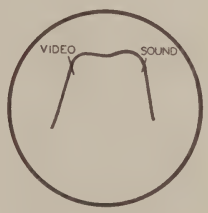
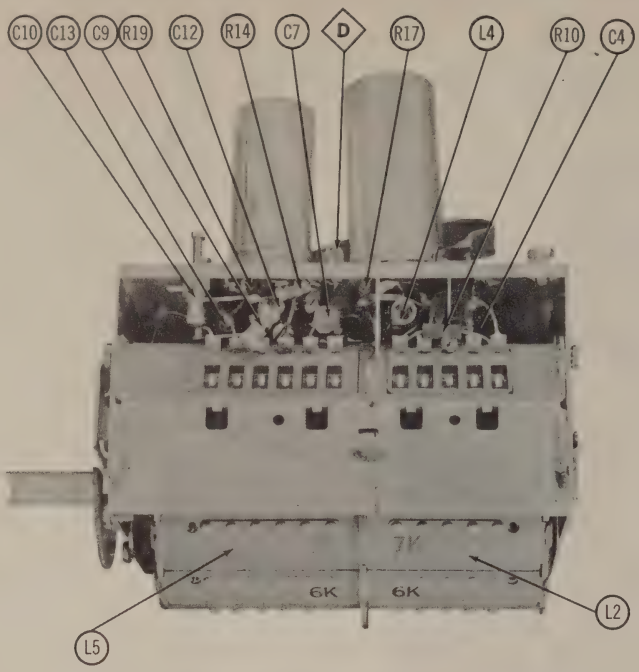


FIG.6

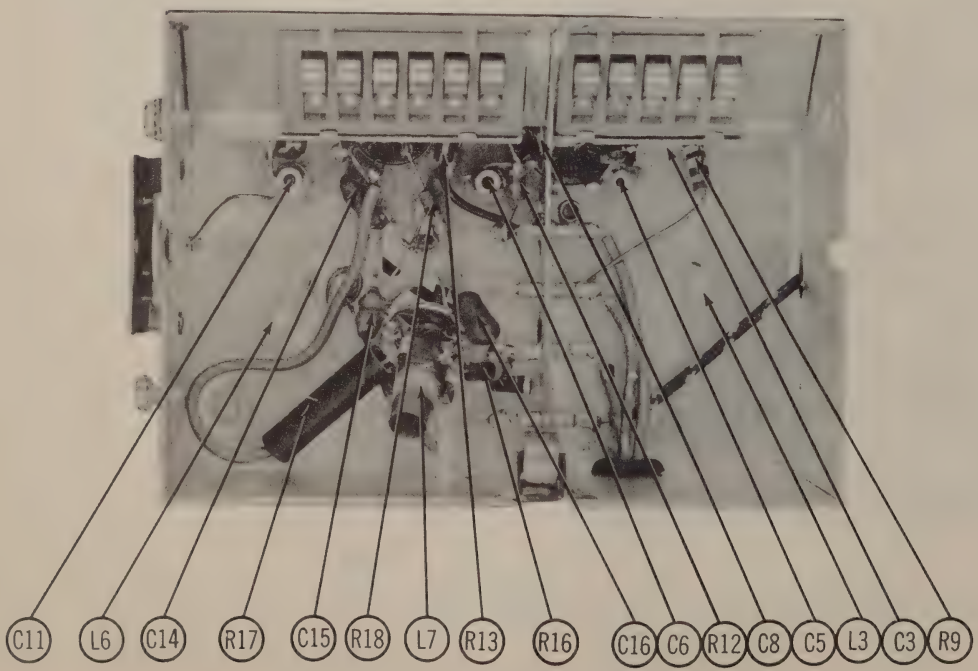
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	2Meg	0Ω	.1Ω	0Ω	†1.5KΩ	110KΩ	INF	0Ω
V 2	6J6	†11KΩ	†11KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6AU6	1Meg	0Ω	0Ω	.1Ω	†1.8KΩ	†1.8KΩ	68Ω		
V 4	6CB6	.2Ω	220Ω	0Ω	.1Ω	†1.8KΩ	†1.8KΩ	0Ω		
V 5	6CB6	.3Ω	220Ω	0Ω	.1Ω	†1KΩ	†1.8KΩ	0Ω		
V 6	6AL5	4.7KΩ	4.7KΩ	0Ω	.1Ω	1.4Ω	0Ω	1Meg		
V 7	6CB6	1.1Meg	400Ω	.1Ω	0Ω	†6.8KΩ	†1.3KΩ	400Ω		
V 8	6AU6	1Meg	0Ω	.1Ω	0Ω	†1.8KΩ	†1.8KΩ	220Ω		
V 9	6AU6	47KΩ	0Ω	0Ω	.1Ω	†1.8KΩ	7.5KΩ	0Ω		
V 10	6AL5	0Ω	100KΩ	.1Ω	0Ω	200KΩ	0Ω	100KΩ		
V 11	6AV6	10Meg	0Ω	0Ω	.1Ω	2Meg	100KΩ	†220KΩ		
V 12	6V6GT	13KΩ	.1Ω	†1.9KΩ	†1.5KΩ	470KΩ	†1.3KΩ	0Ω	470Ω	
V 13	12AU7	8.5KΩ	2.2Meg	0Ω	0Ω	0Ω	†33KΩ	15KΩ	0Ω	.1Ω
V 14	12AU7	4.3KΩ	2.3Meg	0Ω	.1Ω	.1Ω	†10Meg	2.4Meg	0Ω	0Ω
V 15	6SN7GT	1.2Meg	#2.1Meg	2.2KΩ	150Ω	†150KΩ	2.2KΩ	0Ω	.1Ω	
V 16	6W6GT	1.1KΩ	.1Ω	†345Ω	†345Ω	2.2Meg	INF	0Ω	1.6KΩ	
V 17	6SN7GT	1.5Meg	†11KΩ	412KΩ	480KΩ	#90KΩ	0Ω	0Ω	.1Ω	
V 18	6BQ6GT	INF	0Ω	INF	†6.8KΩ	470KΩ	470KΩ	.1Ω	100Ω	TOP CAP #28Ω
V 19	6W4GT	INF	INF	80KΩ	INF	†75Ω	INF	#24Ω	#24Ω	
V 20	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP #828Ω
V 21	6AX5GT	INF	.1Ω	30Ω	INF	29Ω	INF	0Ω	10KΩ	
V 22	6AX5GT	INF	.1Ω	30Ω	INF	29Ω	INF	0Ω	10KΩ	
V 23	17HP4	0Ω	0Ω	PIN 6 400KΩ	PIN 10 500K Ω	PIN 11 260KΩ	PIN 12 .1Ω			

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
FRINGE COMPENSATOR IN OFF POSITION
† MEASURED FROM PINS 8 OF V21 & V22
# MEASURED FROM PINS 3 OF V19

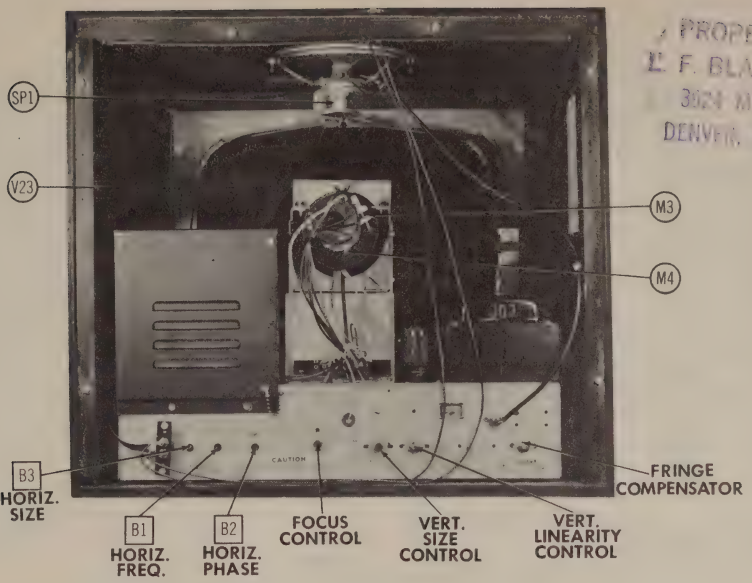


RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

PROPERTY OF
L. F. BLANKENSHIP
3624 MEADE ST.
DENVER, COLORADO



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Connect a short across C72.

Turn the set on and tune in a station, preferably a test pattern.

Turn the horizontal hold control to maximum clockwise position. Starting with the horizontal frequency slug, (B1), all the way out, adjust in a clockwise direction until the picture synchronizes.

Remove the short from C72 and connect the vertical input lead of an oscilloscope through a 22K resistor to the junction of C72 and R98. Connect low side of scope to chassis.

Adjust the horizontal waveform slug, (B2), until the broad and narrow peaks of the waveform on the scope are of equal height as shown in fig. 7.

If necessary during adjustment of B2 adjust B1 to the keep the picture synchronized.

Adjust the horizontal size slug, (B3), until the picture fills the mask horizontally.

FRINGE COMPENSATOR ADJUSTMENT

Turn the set on and turn to a station, preferably a low channel.

Turn the fringe compensator on and adjust to the middle of its range.

Check all channels received in the area and if necessary readjust for best results.

Use of the compensator in strong signal areas may result in vertical instability or audio buzz.

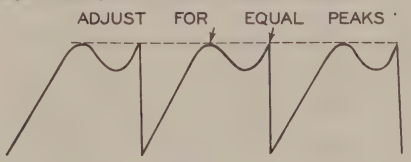


FIG. 7

DISASSEMBLY INSTRUCTIONS

1. Remove 4 Push On Type Control Knobs from front panel.
2. Remove 6 wood Screws. Remove Rear Cover.
3. Disconnect Built-in Antenna and Speaker.
4. Remove 2 nuts holding Speaker. Remove Speaker.
5. Remove 4 Chassis Bolts. Remove Chassis.

NOTE.
For Picture Tube Removal it is necessary to remove Chassis as outlined above.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	800068	6BK7	9AJ	
V1B	RF Amplifier	800065	6BQ7	9AJ	
V2	Converter	800536	6J6	7BF	
V3	1st. Video IF Amp	800533	6AU6	7BK	
V4	2nd Video IF Amp	800055	6CB6	7CM	
V5	3rd. Video IF Amp	800055	6CB6	7CM	
V6	Video Detector-AGC Rectifier	800541	6AL5	6BT	
V7	Video Output	800055	6CB6	7CM	
V8	Sound IF Amp	800533	6AU6	7BK	
V9	Limiter	800533	6AU6	7BK	
V10	Discriminator	800541	6AL5	6BT	
V11	AF Amplifier-AGC Clamper-Sync Clamper	800057	6AV6	7BT	
V12	Audio Output	800270	6W6GT	7AC	
V13	Sync. Amplifier-Horiz. Sync. Amp	800026	12AU7	9A	
V14	Vert. Sync. Sep-Horiz. Sep	800026	12AU7	9A	
V15	Vert. Mult.	800380	6SN7GT	8BD	
V16	Vert. Output	800061	6W6GT	7AC	
V17	Horiz. AFC-Horiz. Oscillator	800380	6SN7GT	8BD	
V18	Horiz. Output	800059	6BQ6GT	6AM	
V19	Damper	800037	6W4GT	4CG	
V20	HV Rectifier	800450	1B3GT	3C	
V21	LV Rectifier	800062	6AX5GT	6S	
V22	LV Rectifier	800062	6AX5GT	6S	

CATHODE-RAY TUBE

ITEM No	REPLACEMENT DATA: EMERSON PART No	SYLVANIA	EIA BASE TYPE	NOTES
V23A	810035	21EP4	21C	① Zero-Voltage Electrostatic Focusing Tube
B	810036	21BP4	21D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: A EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	300	925203	PRS450-40-40	-	UP8445		TVA-2740	Filter (Blue)
B	80	300		PRS450-80-40	-	UB8035		TVA-1761	Filter (Red)
C	80	300							Audio Output Dec. (Green)
C2A	40	300	925204	AFH4-87		UPT403		TVL-4747	Filter (Red)
B	10	450							Decoupling (Yellow)
C	80	250							Decoupling (Blue)
D	100	50							Vert. Output Cathode (Green)
C3	3-8					529-10			Variable Trimmer
C4	2.2					TCZ-2.2		KPSK-2R2	Neutralizing Cap.
C5	1000			SH1000		D6-102	TMSD1	GP2L-102	5HK-D1 RF Amp. Fil. Bypass
C6	1.5-9					529-3			Variable Transimer
C7	1.5-8			SH130		D6-121	TMST12	GP3K-121	5GA-T12 RF Amp. Plate Dec.
C8	1000			BPD-001		DD-102	TMSD1	801-001	5HK-D1 RF Amp. Grid Bypass
C9	130			SH200		D6-101	TMST1	GP3K-101	5GA-T1 RF Coupling
C10	1.5-8					529-3			Variable Trimmer
C11	1.5-3					529-3			Variable Trimmer
C12	30			SH30MPO		TCZ-30		NPSK-200	Osc. Grid Cap.
C13	10			SH10N750		TCN-10		N750K-100	Fixed Trimmer
C14	1000			SH1000		D6-102	TMSD1	GP2L-102	5HK-D1 Conv. Fil. Bypass
C15	10			SH10N750		TCN-10		N750K-100	STCC-Q2 Fixed Trimmer
C16	1000			SH1000		D6-102	TMSD1	GP2L-102	5HK-D1 Mixer-Plate Dec.
C17	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 AGC Filter
C18	25	400-	921330	P488-25			PTS4P25		4TM-P25 AGC Filter
C19	10			SH50		D6-100		GP1K-100	5GA-Q5 IF Coupling *
C20	68	300				TCN-68			N750K-620 Fixed Trimmer *
C21	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 AGC Filter
C22	1500		922003	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 1st. Video IF Dec.
C23	47			SH47		D6-470	SR5Q5	GP1K-470	5GA-Q47 Fixed Trimmer
C24	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 2nd. Video IF Dec.
C25	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 2nd. Video IF Cathode
C26	68					TCN-68		N750K-620	Fixed Trimmer
C27	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 3rd. Video TP Plate
C28	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 3rd. Video IF Screen
C29	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 3rd. Video IF Cathode
C30	25		922110	SH25		D6-250	SW5Q25	GP1K-250	5GA-Q25 IF Coupling
C31	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 Video Det. Fil. Bypass
C32	5		922017	SH5MPO		TCZ-5.1		NPSK-050	Video Det. Filter
C33	25	400	921330	P488-25			PTS4P25		4TM-P25 AGC Filter
C34	.047	400	922356	P488-047		DF-503	PTS4P47		4TM-S47 Video Coupling
C35	1	200	921315	P288-1		DF-104	P2P1		2TM-P1 Bias Filter
C36	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 Video Output Screen
C37	.047	400	922356	P488-047		DF-503	PTS4P47		4TM-S47 Video Coupling
C38	.01	600	921714	P688-01		D6-103	PTS6S1	GP2-333-103	6TM-S1 Acc. Anode Bypass
C39	1500		922009	BPD-005		DD-502	TMSD5	811-005	5HK-D5 AGC Filter
C40	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 Sound IF Decoupling
C41	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 Sound IF Cathode
C42	5000		922009	BPD-005		DD-502	TMSD5	811-005	5HK-D5 Sound IF Fil. Bypass
C43	68	500	921321	1469-09007		D6-689	SR5Q7	GP1K-680	MS-47 Limiter Grid Filter
C44	5000		922009	BPD-005		DD-502	TMSD5	811-005	5HK-D5 Limiter Plate Dec.
C45	1500		922006	SH1500		D6-152	TMSD15	GP2L-152	5HK-D15 Limiter Screen Bypass
C46	50	500	922222	1468-00005		D6-500	SW5Q5	GP1K-500	1FM-45 RF Bypass
C47	.001	600	921713	P688-001		D6-102	PTS6D1	GP2L-102	6TM-D1 De-Emphasis
C48	.01	600	921514	P488-01		D6-103	PTS6S1	GP2-333-103	6TM-S1 Audio Coupling
C49	.005	600	921713	P688-005		D6-502	PTS6D5	GP2-333-502	6TM-D5 Audio Coupling
C50	.001	600	921713	P688-001		D6-102	PTS6D1	GP2L-102	6TM-D1 AF Amp. Plate Bypass

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: EMERSON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C51	.047	400	922554	P488-047	DF-503	PTS4P47		4TM-S47	Audio Coupling
C52	.005	600	921753	P688-005	D6-502	PTS6D5	GP2-333-502	6TM-D5	Audio Output Plate
C53	.01	400	922554	P488-01	D6-103	PTS4S1	GP2-333-103	4TM-S1	Sync. Coupling
C54	.047	400	922554	P488-047	DF-503	PTS4P47		4TM-S47	Sync. Coupling
C55	220	500		1469-00025	D6-220	5RS7Z5	GP3K-221		Sync. Coupling †
C56	47	500	910058	1469-00015	D6-470	5RSQ5	GP1K-470	1FM-45	Vert. Sync. Sep. Grid
C57	.047	400	922554	P488-047	DF-503	PTS4P47		4TM-S47	Vert. Sync. Coupling
C58	.0047	400	922453	P488-0047	D6-473	PTS6D47	GP2-333-472	6TM-D47	Vert. MV Feedback
C59	.05	200	921354	P288-05	DF-503	P2P5		2TM-S5	Vert. MV Cathode
C60	.047	600	922054	P688-047		PTS6S47		6TM-S47	Vert. Discharge
C61	.1	500	922715	P688-1	DF-104	PTS6P1		6TM-P1	Vert. Sweep Coupling
C62	.01	400	922514	P488-01	D6-103	PTS4S1	GP2-333-103	4TM-S1	Vert. Sweep Coupling
C63	.01	400	922514	P488-01	D6-103	PTS4S1	GP2-333-103		Horiz. Sync. Coupling
C64	82	500	910056						Horiz. Sync. Coupling
C65	82	500	910056						Horiz. Feedback
C66	25	200	921315	8135	D6-250	5W5Q25	GP1K-250	5GA-Q25	Voltage Divider
C67	.05	400	921554	P488-05	DF-503	PTS4S5		4TM-S5	Horiz. AFC Plate
C68	.05	400	921554	P488-05	DF-503	PTS4S5		4TM-S5	Horiz. AFC Filter
C69	.5	200	921355	P288-5		P2P5		2TM-P5	Horiz. AFC Filter
C70	.02	200	921334	P488-03	DF-203	P2S2		2TM-S3	Horiz. AFC Filter
C71	220	1000	910057						Horiz. Cath. Grid Cap.
C72	.01	400	922041	P488-01	D6-103	PTS4S1	GP2-333-103	4TM-S1	Fixed Trimmer
C73	820	500	910218						Horiz. Discharge
C74	330	500	910059	1469-00035					Horiz. Sweep Coupling
C75	100	500	910100	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Horiz. Output Grid
C76	.1	400	921515	P488-1	DF-104	PTS4P1		4TM-P1	Horiz. Output Screen
C77	.1	200	921315	P288-1	DF-104	P2P1		2TM-P1	Horiz. Output Cathode
C78	300	2000	928068						Damper Fil. Bypass
C79	.1	600	923715	P688-1		PTS6P1		6TM-P1	Damper Filter
C80	.033	1000	922834	P1088-033					Horiz. Sweep Coupling
C81	.05	400	922200	489G2XY-05		P2485		4TM-S5	Line Filter
C82	.05	400	922200	489G2XY-05		P2485		4TM-S5	Line Filter

* Not used in all models

† Some models use 110MMF in this application (Part #910043)

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1500Ω	½	390184	"Concentrikit" B17-110 * B13-137	RTV-296	SBB-701-S	Contrast Control - Panel
B	1Meg	½					Volume Control - Rear
C	Shaft End		Not. Req.	R187 *			Attach per instructions in "Concentrikit"
D	Switch		Not Req.	76-1 *			Attach per instructions in "Concentrikit"
R2A	200KΩ	½	390191	QU-129	AG-52-8	B-46	Brightness Control
B	Shaft		Not Req.	Not Req.	Not Req.	AN-91	Attach to R2A per instructions
R3A	1Meg	½	390183	QU-137	AG-51-S	AN-69	Vert. Hold Control
B	Shaft		Not Req.	Not Req.	NS-2	AK-4	Attach to R3A per instructions
R4A	50KΩ	½	390184	QU-123	AG-44-S	AN-31	Horiz. Hold Control
B	Shaft		Not Req.	Not Req.	RS-2	AK-4	Attach to R4 per instructions.
R5A	2Meg	½	390142	QU-139	AG-53-S	AN-75	Vert. Size Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R5A per instructions.
R6A	2Meg	½	390142	QU-139	AG-53-S	AN-75	Focus Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R6A per instructions
R7	5000Ω	2	390143	W-5000	43-5000	VK-135	Vert. Linearity control - Wire wound
R8	1.5Meg	½	390202				Fringe Compensator Control

* Additional Parts to be used with Concentrikit.

RESISTORS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE NOTED.
R9	47KΩ	20%		BTS-47K	RF Amp. Grid
R10	22KΩ	20%			Antenna Coil Shunt
R11	220KΩ			BTS-220K	RF Amp. Grid
R12	220KΩ		950412	BTS-220K	Voltage Divider
R13	1000Ω	20%		BTS-1000	RF Amp. Plate Decoupling
R14	4700Ω		940123	BTS-4700	Mixer Grid
R15	220KΩ		950412	BTS-220K	Mixer Grid
R16	10KΩ		950412	BTS-470	Mixer Plate Decoupling
R17	10Ω				Parasitic Suppressor
R18	10KΩ				Osc. Plate
R19	10KΩ				Osc. Grid
R20	220Ω		940333	BTS-220	Decoupling
R21	470Ω	20%	950412	BTS-470	Decoupling
R22	470Ω	20%	950412	BTS-470	AGC Network
R23	5600Ω		940072	BTS-5600	1st. Video IF Coil Shunt
R24	820Ω		940123		1st. Video IF Amp. Cathode
R25	470Ω	20%	950412	BTS-470	1st. Video IF Amp. Decoupling
R26	470Ω	20%	950412	BTS-470	AGC Network
R27	8200Ω		940712		2nd. Video IF Coil Shunt - See Note 1
R28	5600Ω		940072		2nd. Video IF Coil Shunt - See Note 2
R29	220Ω		940333	BTS-220	2nd. Video IF Amp. Cathode
R30	470Ω	20%	950412	BTS-470	2nd. Video IF Amp. Decoupling
R31	8200Ω		940712		3rd. Video IF Coil Shunt
R32	220Ω		940333	BTS-220	3rd. Video IF Amp. Cathode
R33	470Ω	20%	950412	BTS-470	3rd. Video IF Amp. Screen
R34	10000Ω		940492	BTS-1000	3rd. Video IF Amp. Plate Decoupling
R35	1Meg	20%	351212	BTS-1Meg	AGC Network
R36	1Meg	20%	351212	BTS-1Meg	AGC Network
R37	1Meg	20%	351212	BTS-1Meg	AGC Network
R38	4700Ω		940852	BTS-4700	Video Det. Diode Load
R39	33KΩ		370852	BTS-33K	Video Peaking Coil Shunt
R40	1Meg	20%	351212	BTS-1Meg	Video Output Grid
R41	82KΩ		940812	BTS-82K	Video Peaking Coil Shunt
R42	6800Ω	5%	770692	BTS-6800 5%	Video Amp. Plate
R43	470KΩ		351132	BTS-470K	Picture Tube Cathode
R44	470KΩ	20%	351132	BTS-470K	Voltage Divider
R45	470KΩ	20%	351132	BTS-470K	ACC Anode Load
R46	8200Ω		940712		Sound IF Coil Shunt - See Note 1
R47	5600Ω		940672		Sound IF Coil Shunt - See Note 2

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: Emerson PART No.	IRC PART No.	IDENTIFICATION CODES
R48	220Ω	½	940332	BTS-220	Sound IF Amp. Cathode
R49	470Ω	20% ½	350412	BTS-470	Sound IF Amp. Decoupling
R50	1Meg	20% ½	351212	BTS-1Meg	AVC Network
R51	47KΩ	½	340892		Limiter Grid
R52	10KΩ	½	340732		Limiter Screen
R53	15KΩ	½	370772		Limiter Screen
R54	470Ω	20% ½	350412	BTS-470	Limiter Decoupling
R55	10Meg	20% ½	351452	BTS-10Meg	Delayed AGC Network
R56	10KΩ	½	340732	BTS-10K	Voltage Divider
R57	68KΩ	½	340932	BTS-68K	De-emphasis
R58	100KΩ	½	340972	BTS-100K	Discriminator Diode Load
R59	100KΩ	½	340972	BTS-100K	Discriminator Diode Load
R60	10Meg	20% ½	351452	BTS-10Meg	AF Amp. Grid
R61	220KΩ	½	341052	BTS-220K	AF Amp. Plate
R62	470KΩ	20% ½	351132	BTS-470K	Output Grid
R63	470Ω	1	370042	BTA-470	Output Cathode
R64	1500Ω	20% 2	790532	BTB-1500	Output Decoupling
R65	100KΩ	½	340972	BTS-100K	Sync. Clamper Diode Load
R66	10KΩ	½	340732	BTS-10K	Isolation
R67	33KΩ	1		BTA-33K	Vert.Sync. Amp. Plate
R68	100KΩ	½	340972	BTS-100K	Vert.Sync. Seperator Grid
R69	10Meg	20% ½	351452	BTS-10Meg	Vert.Sync. Seperator Plate
R70	15Ω	10% 2	940292	BTS-150	Vert. MV Grid
R71	820KΩ	½	341092	BTS-820K	Vert. MV Grid - See Note 3
R72	150KΩ	½	341052	BTS-150K	Vert. MV Plate
R73	220KΩ	½	340972	BTS-220K	Vert. MV Cathode
R74	1.5Meg	½	340952	BTS-1.5Meg	Vert. MV Plate - See Note 4
R75	12KΩ	½	340752	BTS-12K	Vertical Peaking
R76	220KΩ	½	341052	BTS-220K	Vert. Biasing Network
R77	2.2Meg	½	341292	BTS-2.2Meg	Vert. Output Grid
R78	470Ω	20% ½	350412	BTS-470	Vert. Output Cathode
R79	12KΩ	½	340752	BTS-12K	Voltage Divider
R80	27KΩ	1	370832	BTA-27K	Horiz.Sync.Amp. Plate
R81	2.2Meg	½	341292	BTS-2.2Meg	Horiz.Sync. Amp. Grid
R82	22KΩ	1	370812	BTA-22K	Horiz. Sync. Seperator Plate
R83	2.2Meg	½	341292	BTS-2.2Meg	Isolation
R84	470ΩΩ	½	340652	BTS-4700	Voltage Divider
R85	10KΩ	½	340732	BTS-10K	Isolation
R86	100KΩ	½	340972	BTS-100K	Differentiator Network
R87	330KΩ	½	341092	BTS-330K	Horiz. AFC Grid
R88	820KΩ	½	341192	BTS-820K	Horiz. AFC Grid
R89	82KΩ	½	340952	BTS-82K	Horiz. AFC Cathode
R90	3900Ω	½	340632	BTS-3900	Horiz. AFC Filter
R91	100KΩ	½	340972	BTS-100K	Horiz. Feedback
R92	100KΩ	½	340972	BTS-100K	Horiz. Feedback
R93	100KΩ	1	340972	BTA-68K	Voltage Divider
R94	68KΩ	1	340932	BTS-68K	Horiz. Osc. Plate
R95	150KΩ	5% ½	331012	BTS-150K 5%	Horiz. Osc. Grid
R96	330KΩ	5% ½	331092	BTS-330K 5%	Horiz. AFC Cathode
R97	8200Ω	½	340712	BTS-8200	Horiz. Osc. Coil Shunt
R98	100Ω	2	790252	BW-2-100	Horiz. Output Cathode
R99	470KΩ	½	341132	BTS-470K	Horiz. Output Grid
R100	6800Ω	2	780692	BTB-6800	Horiz. Output Screen
R101	220KΩ	½	340812	BTS-221K	Decoupling
R103	8.5Ω	5	394122		Bias Network - Wire Wound
R103	100KΩ	½	340972	BTS-100K	Bias Network
R104	1250Ω	10	394116	1 3/4A-1250	Filter - Wire Wound
R105	100KΩ	½	3709?2	BTA-100K	Line Isolation
R106	68Ω	½	340812		Parasitic Suppressor

Note 1. Some Models use a 15KΩ Resistor in this application

Note 2. Not used in all Models

Note 3. Some Models use a 1Meg Resistor in this application

Note 4. Some Models use a 680KΩ Resistor in this application

Note 5. Some Models use a 82KΩ Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	530VCT	12.6VCT	5.3VAC	730032	P-8169 ①	P-3066 ①	
	② 1.65A	.235ADC	② 5.6A	② 1.2A				

① Add series resistor to reduce high voltage

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	875Ω Tapped ② 5Ω 24Ω 48Ω 54Ω & 76Ω	9Ω	738060				Horiz. Output Trans.
T3	270 Tapped ② .9Ω		738059	A-8140 ②	A-3081 ③		Vert. Output Trans.
T4A	58Ω		708135	DY-10	MDF-50		Horiz. Deflection Coils
B	3.5Ω		708073 ④ 708150 ④ ⑤				Vert. Deflection Coils

① Drill new mounting holes

② Select windings for 30 to 1 turns ratio

③ Alternate yoke

④ When using yoke #708150 to replace either 708135 or 708073 A 1500Ω ½ watt resistor must be connected between pin 8 of yoke and lead of 370MMF cap. in yoke

PROPE... L. F. B... ...NP ...NEAPOLIS, ST... ...DENNIS, COLUMBO...

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T5	5.2KΩ	3.6Ω	330Ω	.7Ω	734051	A-3823	A-3019	RO-303	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	EMERSON PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P.M.	3.6Ω	180041C 180041 ⑥ 180050 ⑥ 180082 ⑥	ST-108 Mod. P6-X	6A1	⑥ Alternate Speaker
	CONE DIA.	V. C. DIA.				
SP1B	6"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↺)	EMERSON PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.235ADC	75Ω	1.5 Hy.	737016 737017 ⑦	C-2326 ⑧	C-2991 ⑧	TR-3300⑧	⑦ Alternate choke ⑧ Drill one new mounting hole.

COILS (RF-IF)

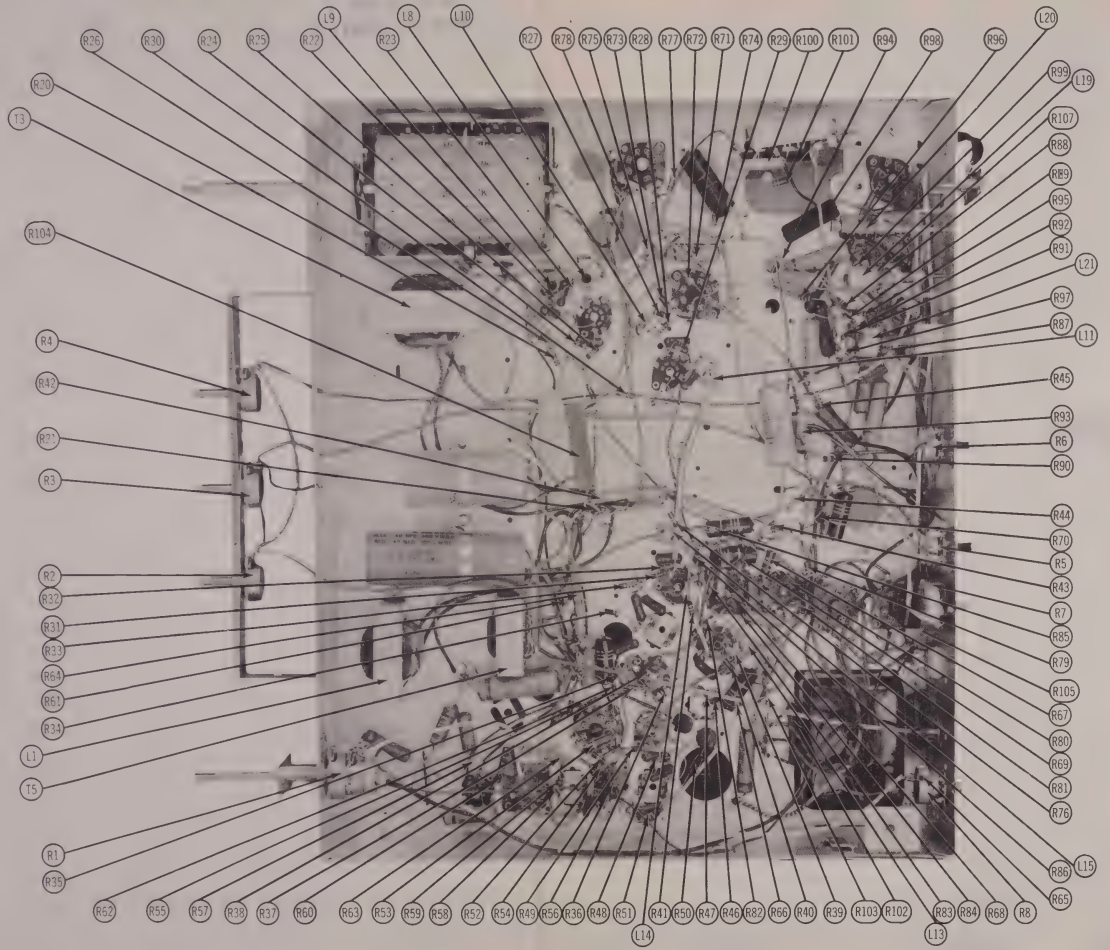
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	EMERSON PART No.	MERIT PART No.	
L2	Ant. Coils	0Ω				
L3	Fil. Choke	0Ω				
L4	RF Choke	0Ω				
L5	RF, Mixer Grid & Osc. Coils	0Ω				
L6	Fil. Choke	0Ω				
L7	Conv. Plate	.1Ω				
L8	1st. Video IF	.1Ω	.5Ω	720131		
L9	21.25MC Trap	0Ω		720151	TV-151	
L10	2nd. Video IF	.2Ω	.2Ω	720139		Includes Trap
L11	3rd. Video IF	.3Ω	.3Ω	720133		Includes Trap
L12	4th. Video IF	1.4Ω	1.4Ω	720127		
L13	Peaking Coil	7.2Ω		708100	TV-185	250 microhenries
L14	Peaking Coil	7.2Ω		708100	TV-185	250 microhenries
L15	Peaking Coil	15.5Ω		708114	TV-188	440 microhenries
L16	1st. Sound IF	9.5Ω	2.2Ω	720141		
L17	2nd. Sound IF	1.6Ω	1.6Ω	720081		
L18	Discr. Trans.	1.6Ω	1.4Ω	708018 or 708017		Tap ⓐ .7Ω
L19	Horiz. Osc.	105Ω		716052		Tap ⓐ 33Ω
L20	Horiz. Size	5Ω		708068		
L21	Horiz. Phase	30Ω		738065		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			EMERSON PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG Pigtail	½A. 250V.	808001		318.500		GJV½	

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M2	RF Tuner	470681	
M3	Centering Magnet	708133	
M4	Ion Trap	708129	
	Knob	450138	Contrast
	Knob	450137	Fine Tuning
	Knob	450134	Off/On - Volume (Shank)
	Knob	460262	Off/On - Volume (Flange)
	Knob	450133	Channel Selector (Shank)
	Knob	460261	Channel Selector (Flange)



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

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HALLICRAFTERS MODELS 1002, 1003, 1004, 1007 (Ch. F1100D)

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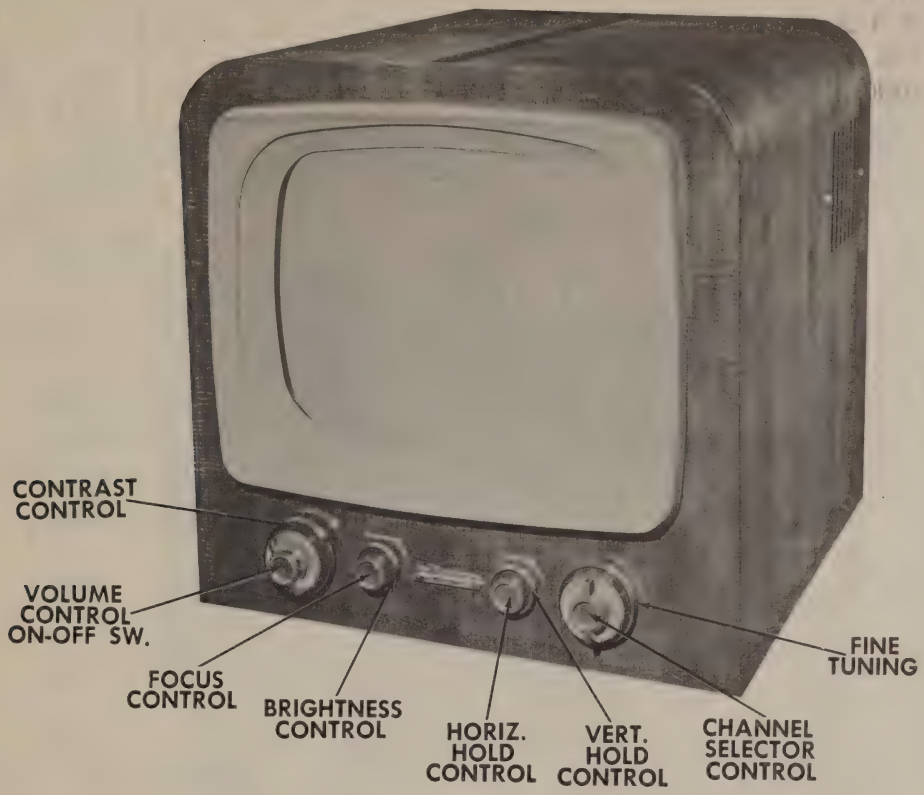
DATE 6-52 SET 169 FOLDER 7

HALLICRAFTERS MODELS 1002, 1003, 1004, 1007 (Ch. F1100D)

HALLICRAFTERS MODELS 1002, 1003, 1004, 1007 (Ch. F1100D)



Hallicrafters Model 1002

TRADE NAME	Hallicrafters Models 1002, 1003, 1004, 1007 (Ch. F1100D)
MANUFACTURER	Hallicrafters Co., 4401 W. 5th. Ave., Chicago 24, Ill.
TYPE SET	Television Receiver
TUBES	Twenty-One
POWER SUPPLY	110-120 Volts AC - 60 Cycle. RATING 1.67 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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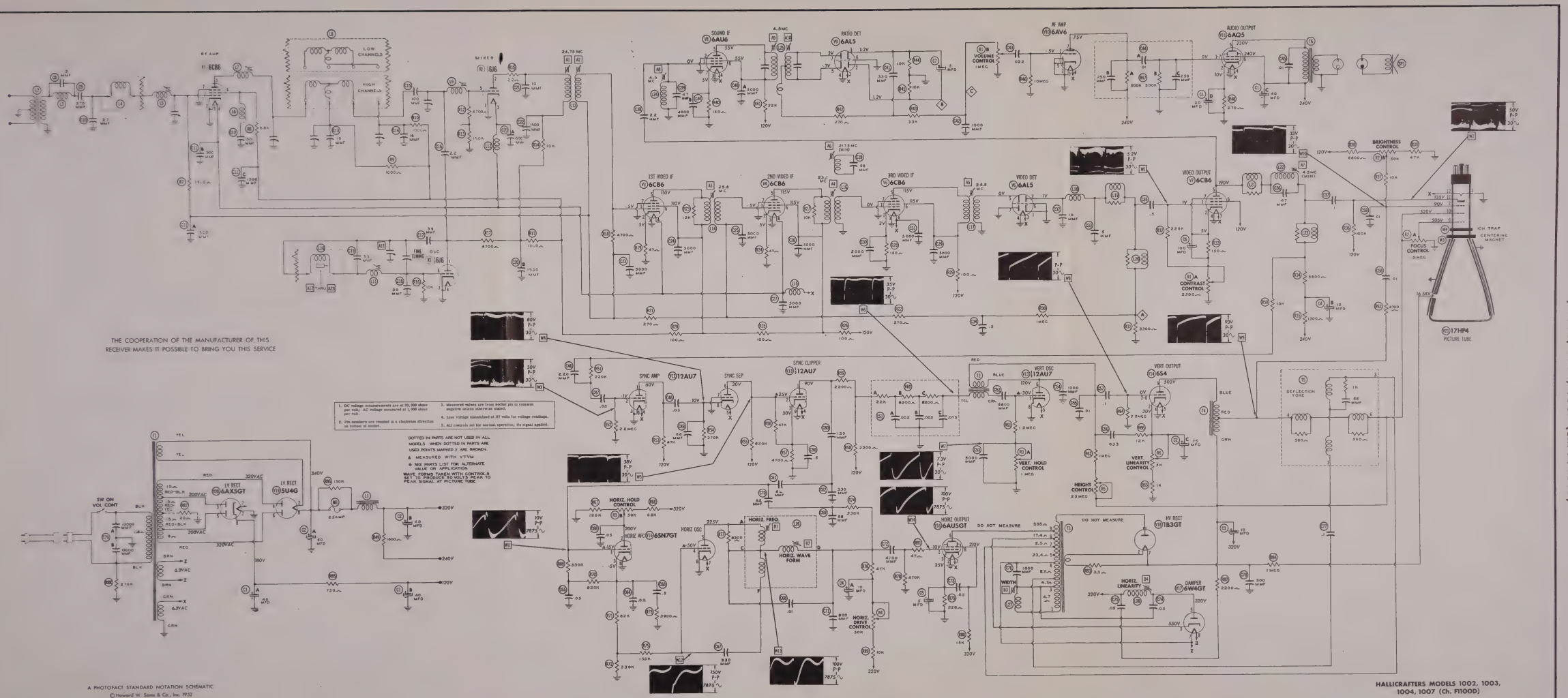
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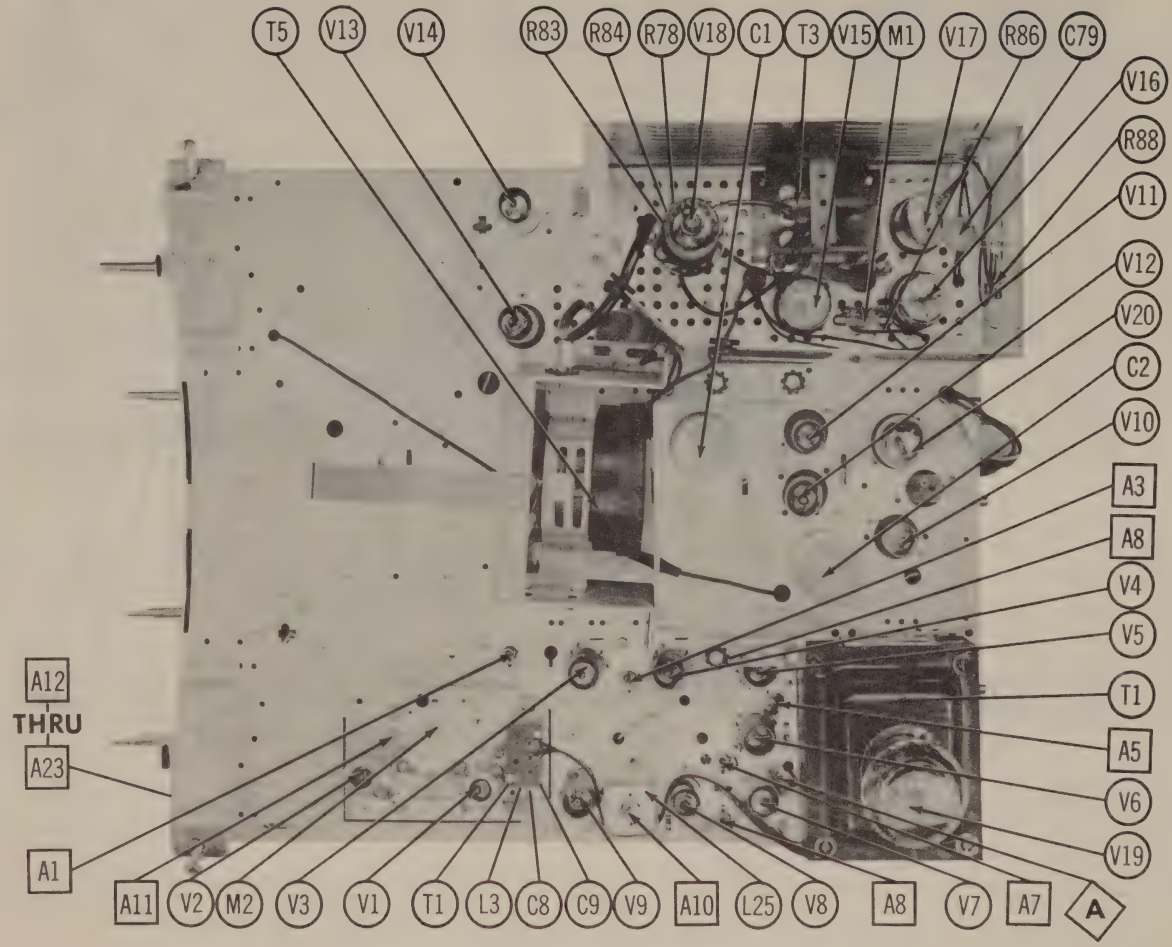
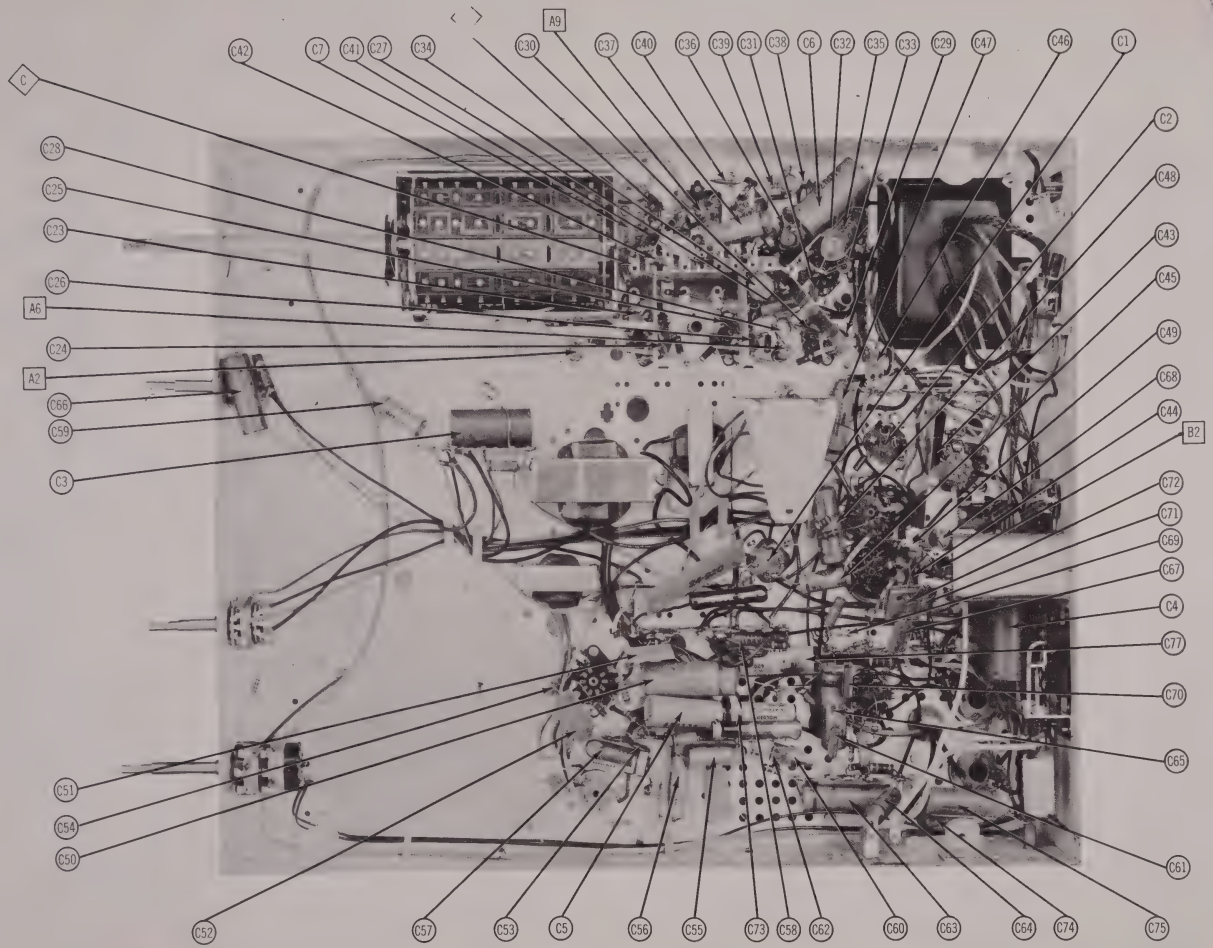


CHASSIS TOP VIEW

L. F. III.
DENVER, COLORADO



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

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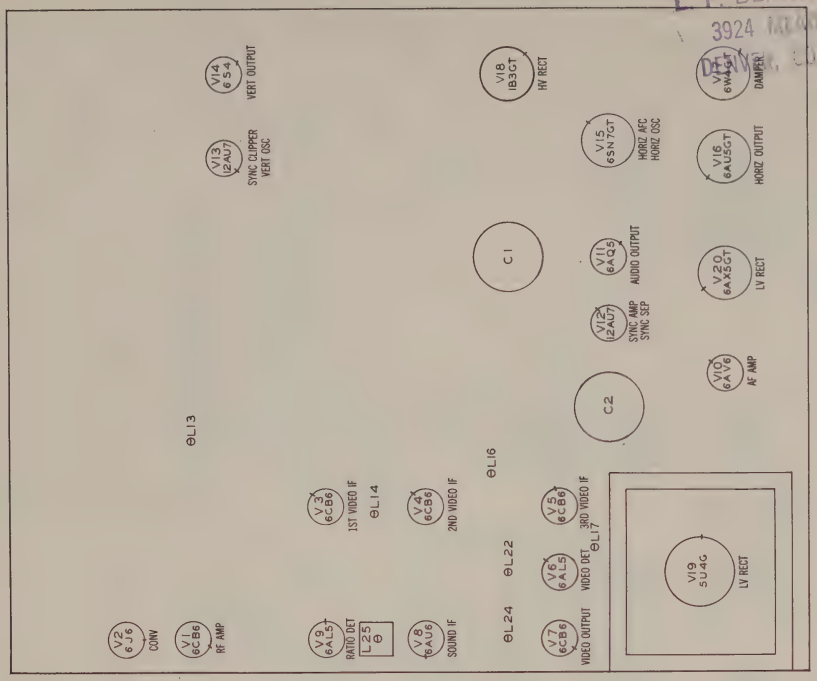
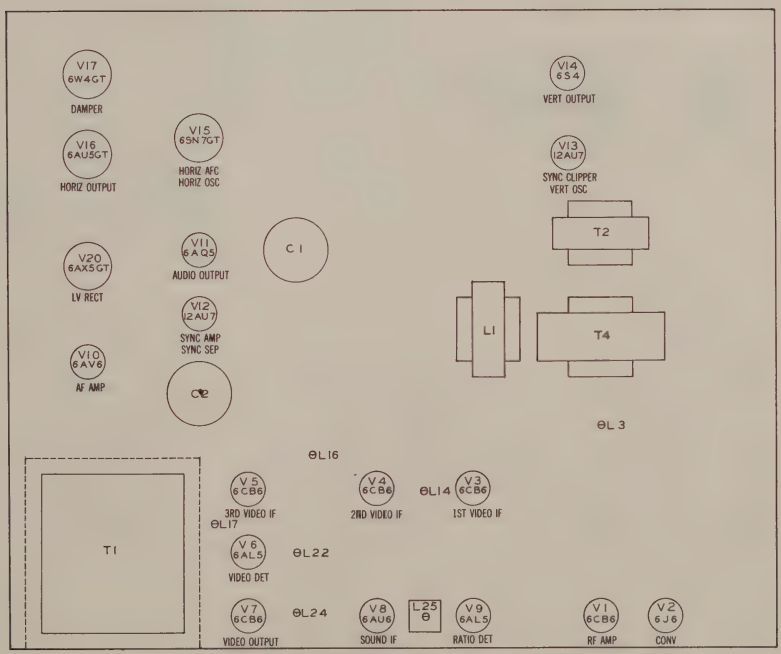
E. F. BLANKENSHIP
3924 MIRAMONTE ST.
DENVER, COLORADO



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube V15 from its socket.

VIDEO IF ALIGNMENT

The bottom core of L13 is concealed by wax which must be removed before alignment. Following alignment, replace the wax.
Remove the Converter tube (V2) from its socket, and replace with a 6J6, which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.
It may be possible to tune the video IF coils to the proper frequency at two positions of the slug. Turn the slugs fully counter clockwise and adjust slug to the first peak.
During adjustment of A1, the secondary winding of L13 should be shunted with a 1000 ohm resistor, and during adjustment of A2 the primary of L13 should be shunted in the same manner. Remove the resistor after adjustments are completed.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24.75MC (unmod.)	Any	DC probe to Point (A). Common to chassis.	A1, A2	Adjust for maximum deflection. Attenuate generator output to maintain approximately 2 volt reading.
2.	"	"	25.6MC	"	"	A3	Adjust for maximum deflection
3.	"	"	23.1MC	"	"	A4	Adjust for maximum deflection
4.	"	"	24.5MC	"	"	A5	Adjust for maximum deflection
5.	"	"	21.75MC	"	"	A6	Adjust for MINIMUM deflection. Repeat Step 3.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24MC (10MC swp.)	21.75MC 26.25MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to Fig. 1. If necessary adjust A1 through A5 for proper response

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.005MFD	High side to Point (A). Low side to chassis.	4.5MC (unmod.)	Any not used locally.	DC probe thru detector, (Fig.2) to pin 11 of picture tube. Common to chassis.	A7	Adjust for MINIMUM deflection. Attenuate signal gen. to maintain 1 volt reading.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.005MFD	High side to Point (A). Low side to chassis.	4.5MC (unmod.)	Any	DC probe to Point (B). Common to chassis.	A8, A9	Adjust for maximum deflection
9.	"	"	"	"	DC probe to Point (C). Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.005MFD	High side to Point (A). Low side to chassis.	4.5MC (450KC swp.)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A8, A9	Disconnect stabilizor capacitor C7. Adjust A8 and A9 for maximum amplitude and symmetry as per Fig. 3.
9.	"	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A10	Reconnect capacitor C7. Adjust A10 so that 4.5MC occurs at center of crossover lines as per Fig. 4. SLIGHTLY retouch A9 for maximum amplitude and straightness of of crossover lines.

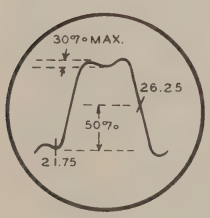


FIG. 1

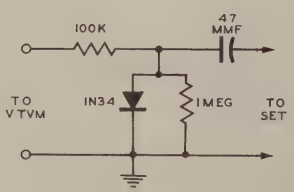


FIG. 2

FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR CIRCUIT ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Set the fine tuning control to the mid position of its range.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC swp.)	211.25MC 215.75MC	13	Vert. amp. to Point ◇ Low side to chassis.	A11	Adjust to place sound markers in trap "notch" as shown in Fig. 5. The video marker should be at 50%
11.	"	"	207MC (10MC swp.)	205.25 MC 209.75MC	12	"	A13	Adjust to place video and sound markers on response curve as per Fig. 5. If adjustment for any channel has insufficient range readjust A11 for correct marker placement on that channel. If A11 is changed, adjust A12 on channel 12 & readjust A13 thru A23
			201MC (10MC swp.)	199.25MC 203.75MC	11		A14	
			195MC (10MC swp.)	193.25MC 197.75MC	10		A15	
			189MC (10MC swp.)	187.25MC 191.75MC	9		A16	
			183MC (10MC swp.)	181.25MC 185.75MC	8		A17	
			177MC (10MC swp.)	175.25MC 179.75MC	7		A18	
			85MC (10MC swp.)	83.25MC 87.75MC	6		A19	
			79MC (10MC swp.)	77.25MC 81.75MC	5		A20	
			69MC (10MC swp.)	67.25MC 71.75MC	4		A21	
			63MC (10MC swp.)	61.25MC 65.75MC	3		A22	
			57MC (10MC swp.)	55.25MC 59.75MC	2		A23	

FIG. 4

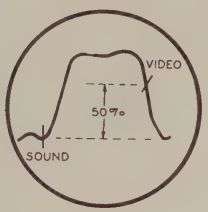
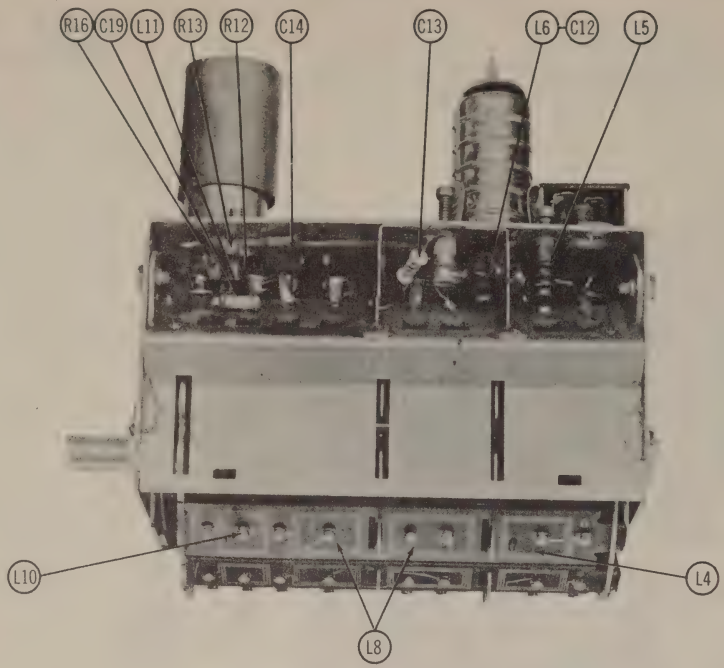


FIG. 5

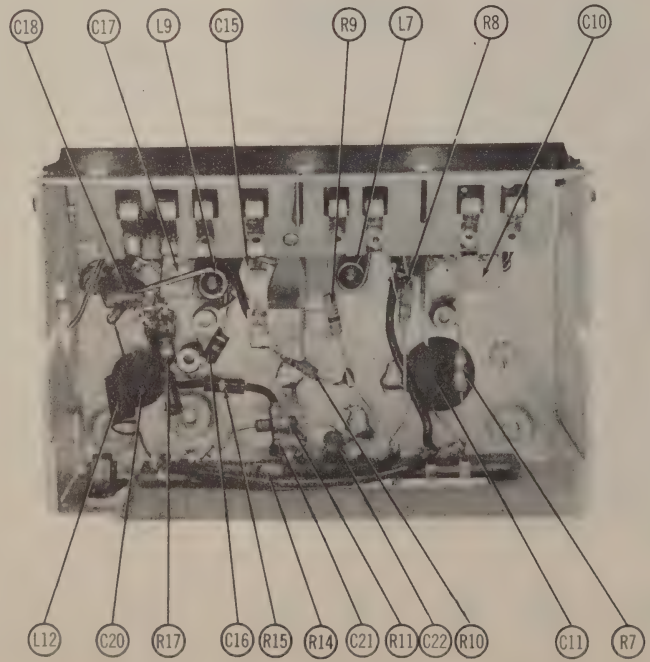
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	1Meg	0Ω	0Ω	.1Ω	■2KΩ	■7.8KΩ	0Ω		
V 2	6J6	■6.7KΩ	■12KΩ	0Ω	.1Ω	150KΩ	10KΩ	0Ω		
V 3	6CB6	1Meg	47Ω	0Ω	.1Ω	■950Ω	■950Ω	0Ω		
V 4	6CB6	1Meg	47Ω	0Ω	.1Ω	■850Ω	■850Ω	0Ω		
V 5	6CB6	.1Ω	150Ω	0Ω	.1Ω	■850Ω	■850Ω	0Ω		
V 6	6AL5	0Ω	3.3KΩ	.1Ω	0Ω	.2Ω	0Ω	0Ω		
V 7	6CB6	220KΩ	500Ω	.1Ω	0Ω	†8.8KΩ	■750Ω	500Ω		
V 8	6AU6	1Ω	0Ω	0Ω	.1Ω	■22KΩ	■22KΩ	150Ω		
V 9	6AL5	10KΩ	10KΩ	.1Ω	0Ω	1Meg	0Ω	1Meg		
V 10	6AV6	10Meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†500KΩ		
V 11	6AQ5	500KΩ	270Ω	0Ω	.1Ω	†1.9KΩ	†1.6KΩ	500KΩ		
V 12	12AU7	■47KΩ	2.2Meg	0Ω	.1Ω	.1Ω	50KΩ	0Ω	270KΩ	0Ω
V 13	12AU7	■5.1KΩ	50KΩ	4.7KΩ	.1Ω	.1Ω	#2.2Meg	1.5Meg	0Ω	0Ω
V 14	6S4	INF	2.5KΩ	2.2Meg	0Ω	.1Ω	2.2Meg	INF	INF	#3.8KΩ
V 15	6SN7GT	1.5Meg	†55KΩ	410KΩ	480KΩ	†70KΩ	0Ω	.1Ω	0Ω	
V 16	6AU5GT	470KΩ	0Ω	220Ω	INF	#17Ω	INF	.1Ω	†15KΩ	
V 17	6W4GT	INF	INF	1.1Meg	INF	†92Ω	INF	#26Ω	#26Ω	
V 18	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP #552Ω
V 19	5U4G	INF	90KΩ	INF	24Ω	INF	25Ω	INF	90KΩ	
V 20	6AX5GT	#32Ω	0Ω	15Ω	INF	#32Ω	15Ω	.1Ω	80KΩ	
V 21	17MP4	0Ω	60KΩ	PIN 6 500KΩ	PIN 10 #2.2KΩ	PIN 11 ■100KΩ	PIN 12 .1Ω			

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 8 OF V19
# MEASURED FROM PIN 3 OF V17
■ MEASURED FROM PIN 8 OF V20



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

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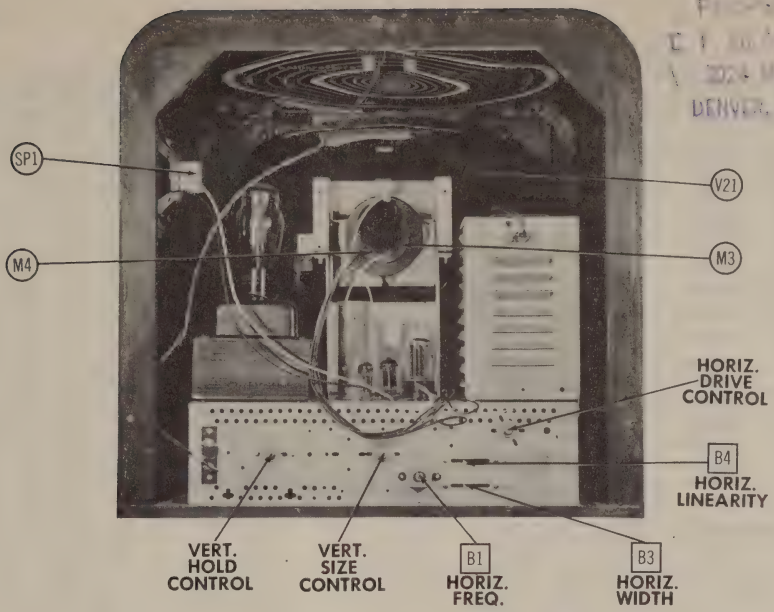
DENVER, COLORADO



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR ADJUSTMENTS

Turn the set on and tune in a TV Station, preferable a test pattern.

Turn the horizontal hold control to the full clockwise position.

Adjust the horizontal frequency slug, B1, until a vertical black bar appears on the screen.

Turn the horizontal hold control fully counter clockwise and momentarily remove the signal by turning to another Channel, then return to the original channel. The resulting picture may or may not be in synchronization. If it is not in sync., four or less diagonal bars should appear on the screen.

If more than four bars appear, reset the horizontal hold control fully clockwise and readjust B1 as before.

Connect the vertical amplifier of an oscilloscope through a 47KΩ Resistor to terminal C of L26. If necessary, adjust the horizontal waveform slug, B2, to give equal peaks as in Fig. 6. While adjusting B2 it may be necessary to adjust B1 to keep the picture synchronized.

Turn the horizontal drive control clockwise as far as possible without crowding the center of the picture.

Adjust the width slug B3 until the picture is just a little wider than enough to fill the mask.

Adjust the horizontal linearity slug (B4) until picture is symmetrical from left to right.

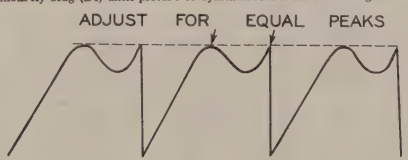


FIG. 6

DISASSEMBLY INSTRUCTIONS

1. Remove 8 Push on Type Control Knobs from Front Panel.
2. Remove 7 wood screws and remove back cover.
3. Disconnect Speaker and Built in Antenna.
4. Remove 4 nuts holding Speaker. Remove Speaker.
5. Remove 4 Chassis Bolts. Remove Chassis.

NOTE. For Picture tube removal, it is necessary to remove chassis as outlined above.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: Hallicrafters PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	90X6CB6	6CB6	7CB	
V2	Converter	90X6J6	6J6	7BF	
V3	1st. Video IF Amp.	90X6CB6	6CB6	7CB	
V4	2nd. Video IF Amp	90X6CB6	6CB6	7CB	
V5	3rd. Video IF Amp	90X6CB6	6CB6	7CB	
V6	Video Detector	90X6AL5	6AL5	6BT	
V7	Video Output	90X6CB6	6CB6	7CB	
V8	Sound IF Amp.	90X6AU6	6AU6	7BK	
V9	Ratio Detector	90X6AL5	6AL5	6BT	
V10A	AF Amplifier	90X6AV6	6AV6	7BT	
V10B	AF Amplifier	90X6SQ7GT	6SQ7GT	8Q	
V11	Audio Output	90X6AQ5	6AQ5	7BZ	
V12A	Sync. Amplifier - Sync. Separater	90X12AU7	12AU7	9A	
V12B	Sync. Amplifier - Sync. Separater	90X6SN7GT	6SN7GT	8BD	
V13A	Sync. Clipper - Vert.Oscillator	90X12AU7	12AU7	9A	
V13B	Sync. Clipper - Vert. Osc.	90X6SN7GT	6SN7GT	8BD	
V14	Vert. Output	90X6S4	6S4	9AC	
V15	Horiz. AFC-Horiz. Oscillator	90X6SN7GT	6SN7GT	8BD	
V16	Horiz. Output	90X6AU5GT	6AU5GT	6CK	
V17	Damper	90X6W4GT	6W4GT	4CG	
V18	HV Rectifier	90X1B3GT	1B3GT	3C	
V19	LV. Rectifier	90X5U4G	5U4G	5T	
V20A	LV Rectifier	90X6AX5GT	6AX5GT	8S	
V20B	LV. Rectifier	90X5X4GT	6X5GT	8S	

CATHODE-RAY TUBE

ITEM No	REPLACEMENT DATA: Hallicrafters PART No.	SYLVANIA PART No.	RMA BASE TYPE	NOTES
V21	90X17HP4	17HP4	12C	
		17BP4	12C	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: Hallicrafters PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	250	45B174	AFH4-93		UP4445C		TVL-4739	■ Filter
B	40	250				BR4025			▲ Filter Disc.
C	40	450							▲ Audio Output Dec.
D	20	25							Audio Output Cathode
C2A	60	450	45B173	AFH2-61		UPT62245		TVL-2770	▲ Filter
B	40	450		PR350/100		BR1501		TVA-1310	■ Filter
C	75	50							▲ Vert. Output Cathode
C3	10	450	45-200	PRS450/10		BR1045A		TVA-1705	Vert. Output Dec.
C4A	10	450	45A172	PRS450/10-10		BRD1A5A		TVA-2722	Horiz. Osc. Cathode Decoupling
B	10	450		10					
C5	5	50	45B175	PRS150/4		BR550		TVA-1303	Horiz. Output Cathode
C6	100	10	45B170	PRS12/100		BR1B2A		TVA-1130	Video Output Cathode
C7	5	50	45B175	PRS150/4		BR550		TVA-1303	Stabilizing Cap.
C8	12								Fixed Trimmer
C9	270			S1270	D6-271		GP2K-271	SGA-T27	RF Coupling
C10	27				TC2-27		NP0K-270		Fixed Trimmer
C11A	1500			BPD-0015	DD-152	TMSD15	801-0015	SHK-D15	AGC Filter
B	1500			BPD-0015	DD-152	TMSD15	801-0015	SHK-D15	RF Amp. Plt. Bypass
C	1500			BPD-0015	DD-152	TMSD15	801-0015	SHK-D15	RF Bypass
C12	1500			[illegible]	D6-152	TMSD15	GP2L-152	SHK-D15	RF Amp. Screen Bypass
C13	18				TC2-18		NP0K-180		Fixed Trimmer
C14	16								Fixed Trimmer
C15	100			SU100	D6-101	TMST1	GP1K-101	SGA-T1	RF Coupling
C16	2.2				TCZ-2.2		NP0K-2R2		Osc. Coupling
C17	38								Osc. Feedback
C18	20				TCN-20		N750K-200		Fixed Trimmer
C19	3.3						N750K-3R3		Fixed Trimmer
C20A	1500			BPD-2X0015	DD-2-152	TMSDD15	812-0015	SHK-2D15	Conv. Plt. Bypass
B	1500								RF Bypass
C21	10			SU10NP0	TCZ-10		NP0K-100	STCC-Q1	Fixed Trimmer
C22	1500			SD500	D6-152	TMSD15	GP2L-152	SHK-D15	Mixer Plate Dec.
C23	5000		47A168	BPD-005	DD-502	TMSD5	801-005	SHK-D5	AGC Filter
C24	5000		47A168	BPD-005	DD-502	TMSD5	801-005	SHK-D5	1st. Video IF Dec.
C25	5000		47A168	BPD-005	DD-502	TMSD5	801-005	SHK-D5	AGC Filter
C26	5000		47A168	BPD-005	DD-502	TMSD5	801-005	SHK-D5	2nd. Video IF Dec.
C27	5000		47A168	BPD-005	DD-502	TMSD5	801-005	SHK-D5	2nd. Video IF Fil.
C28	68				TCZ-68		NP0-333-680	STCC-Q68	Fixed Trimmer
C29	5000		47A168	BPD-005	DD-502	TMSD5	801-005	SHK-D5	3rd. Video IF Dec.
C30	5000		47A168	BPD-005	DD-502	TMSD5	801-005	SHK-D5	3rd. Video IF Cathode
C31	5000		47A168	BPD-005	DD-502	TMSD5	801-005	SHK-D5	3rd.Video IF Fil.
C32	10		47B20100K5	S10	D6-100	5W5Q0	GP1K-100	SGA-Q1	Video Det. Filter
C33	5		47B10005K5	S15NP0	TCZ-4.7		NP0K-050		Video Det. Filter
C34	.5	25	46A157	P288-5		P12P5		2TM-P5	AGC Filter
C35	.5	25	46A177	P288-5		P12P5		2TM-P5	Video Coupling
C36	47			S147N750	TCN-47		N750K-470	STCU-Q47	Fixed Trimmer
C37	.1		46AU1047	P488-1	DF-104	PTR4P1		4TM-P1	Video Coupling
C38	2.2		47A180-4		TCZ-2.2		NP0K-2R2		Sound IF Coupling
C39	47			S147N750	TCN-47		N750K-470	STCU-Q47	Fixed Trimmer
C40A	4000		47A218	BPD-2X004	D6-402	TMSDD4	833-004	SHK-2D4	Sound IF Decoupling
B	4000				D6-402				Sound IF Cathode
C41	330		47B20331K5	S1330	D6-331		GP2K-331	SGA-T33	Diode Load Cap.
C42	100		47B20A102M5	SU1000	D6-102	TMSD1	GP2L-102	5HK-D1	De-Emphasis ‡
C43	.022	200		P488-022	DF-203	PTR4S2		4TM-S22	Audio Coupling †
C44A	.01				D6-331				Audio Coupling
B	250		†49A017		†PC-80		†102C1		AF Amp. Plate Bypass
C	.01								Audio Output Grid
C45	.01	600	46A7103J	P688-01	D6-103	PTR6S1	GP2-333-103	6TM-S1	Audio Output Plate

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: Hallicrafters PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C46	220	500	47X20B331K	1468-00025	D6-221	5WS725	GP2K-221	1FM-325	Sync. Coupling
C47	.05	600	46AY503J	P688-05	DF-503	PTR6S5		6TM-S5	Sync. Coupling
C48	.05	600	46AY503J	P688-05	DF-503	PTR6S5		6TM-S5	Sync. Coupling
C49	68		47B30680K5	S168	D6-680	5R5Q7	GP1K-680	5GA-Q68	Sync. Sep. Cathode
C50	.5	200	46A7504J	P288-5		PJ2P5		2TM-P5	Sync. Clipper Cathode
C51A	.002		}	P688-002		PTR6D2	GP2-333-202	}	Vert. Integrator Net.
B	.005		♦ 49A015	P688-005	♦APC-100	PTR6D5	GP2-333-502	♦ 101C1	Vert. Integrator Net.
C	.005		}	P688-005		PTR6D5	GP2-333-502	}	Vert. Integrator Net.
C52	5800	500	47X35B682K						Vert. Osc. Grid Cap.
C53	5000		47A168	BPD-005	DD-502	TMSD5	811-005	5HK-D5	Vert. Hold Cont. Shunt
C54	1000		47B30A102M5	SU000	D6-102	TMSD1	GP2L-102	5HK-D1	Vert. Osc. Plate
C55	.01	600	46A7103J	P688-01	D6-103	PTR6S1	GP2-333-103	6TM-S1	¤F Bypass
C56	.035	600	46AY353F						Vert. Discharge
C57	.1	600	46AX104J	P688-1	DF-104	PTR6P1		6TM-P1	Vert. Sweep Coupling
C58	.01	600	46AY103J	P688-01	D6-103	PTR6S1	GP2-333-103	6TM-S1	Vert. Sweep Coupling
C59	.01	600	46AY103J	P688-01	D6-103	PTR6S1	GP2-333-103	6TM-S1	Integrator Net
C60	120	500	47X20B121K	1469-00015		5R5T15			Horiz. Sync. Coupling
C61	82	500	47X20B823K						Horiz. Sync. Coupling
C62	330	500	47X20B331K	1469-00035					Voltage Divider
C63	.5	200	46A7504J	P288-5		PJ2P5		2TM-P5	Horiz. AFC Filter
C64	.02	600	46AY703J	P688-03	DF-303	PTR6S3		6TM-S3	Horiz. AFC Filter
C65	.05	600	46AY503J	P688-05	DF-503	PTR6S5		6TM-S5	Horiz. AFC Filter
C66	.05	600	46AY503J	P688-05	DF-503	PTR6S5		6TM-S5	Horiz. AFC Plate
C67	330	500	47X20B331K	1469-00035					Horiz. Osc. Grid Cap.
C68	.01	400	46BR103F4	P488-01	D6-103	PTR4S1	GP2-333-103	4TM-S1	Fixed Trimmer
C69	68	2000	47B20680K5	S168	D6-680	5R5Q7	GP1K-680	5GA-Q68	Line Filter
C70	82	500	47X20B820K						Horiz. Feedback
C71	820	500	47X33B821K						Horiz. Discharge
C72	4700	500	47X35B472K	1464-005		1DR5D5		MS-25	Horiz. Sweep Coupling
C73	.05	600	46AY503J	P688-05	DF-503	PTR6S5		6TM-S5	Horiz. Output Screen
C74	.05	600	46AY503J	P688-05		PTR6S5		6TM-S5	Damper Filter
C75	.05	600	46AY503J	P688-05		PTR6S5		6TM-S5	Damper Filter
C76	1800	1000	47A175						Fixed Trimmer *
C77	.1	600	46AX104J	P688-1	DF-104	PTR6P1		6TM-P1	Horiz. Sweep Coupling
C78	500	20000	47A223	HV20C		TV3-502	MM-C30TS		HV Filter
C79A	6000		47-274	BPD-2X006	D6-602	TMSDD6	833-006	8SI-01	5HK-2D6	Line Filter
B	10000			BPD-01				8SI-01	5HK-B1	Line Filter

* Not used in all models.
¶ Some models use .1MFD in this application
† Items C44A, C44B, C44C, R47A, R47B are combined in one unit.
When replacing items separately C44B and C44C should total 250MMF
♦ Items C51A, C51B, C51C R60A, R60B, R60C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: Hallicrafters PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	250Ω	1	25B888	QJ-22 *	RTV-237		Contrast Control - Panel
B	1Meg	½					Volume Control & SW - Rear
R2A	1.5Meg	½	25B994	QJ-300 **			Focus Control - Panel
B	50KΩ	½					Brightness Control - Rear
R3A	1Meg	½	25B917	QJ-62 ♦	RTV-40	SBB-688	Vert. Hold Control - Panel
B	50KΩ	½					Horiz. Hold Control - Rear
R4A	50KΩ	½	25A858	QU-123	AG-44-S	AN-31	Horiz. Drive Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5A	2.5Meg	½	25B711	QU-239	AG-84-S	AN-83	Height Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6A	500Ω	½	25B712	QU-114	AG-19-S	AN-10	Vert. Linearity Control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R6A per instructions

* Concentrikit Equivalent - Kit K-2, Base Elements & Shafts B17-1I & P1-126 (Panel)
B15-137 & R2-216 (Rear) & Switch 76-1.
** Concentrikit Equivalent - Kit K-2, Base Elements & Shafts B11-138 & P1-106 (Panel)
B11-123 & R2-127 (Rear)
† Concentrikit Equivalent - Kit K-2, Base Elements & Shafts B11-137 & P1-105 (Panel)
B11-123 & R2-127 (Rear)

RESISTORS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: Hallicrafters PART No.	IRC PART No.	IDENTIFICATION CODES
					ALL RESISTORS ±10% UNLESS OTHERWISE NOTED
R7	3900Ω	½		BTS-3900	AGC Network
R8	1000Ω	10% ½			RF Amp. Screen
R9	1000Ω	10% ½		BTS-1000	RF Amp.Plate Decoupling
R10	1000Ω	20% ½		BTS-1000	RF Amp. Plate Decoupling
R11	1000Ω	20% ½		BTS-1000	Decoupling
R12	4700Ω	½		BTS-4700	Mixer Grid
R13	330KΩ	20% ½			Mixer Grid
R14	10KΩ	½			Mixer Plate
R15	22Ω	½			Parasitic Suppressor
R16	10KΩ	½			Osc. Grid
R17	4700Ω	½		BTS-4700	Osc. Plate
R18	4700Ω	½	23X20X472K	BTS-4700	1st. Video IF Coil Shunt
R19	470Ω	½	23X20X470K		1st. Video IF Amp. Cathode
R20	100Ω	½	23X20X101K	BTS-100	Decoupling
R21	270Ω	½	23X20X271K	BTS-270	AGC Network - See Note 1
R22	270Ω	½	23X20X271K	BTS-270	AGC Network - See Note 1
R23	12KΩ	½	23X20X123K		2nd. Video IF Coil Shunt
R24	47Ω	½	23X20X470K		2nd. Video IF Amp. Cathode
R25	100Ω	½	23X20X101K	BTS-100	Decoupling
R26	100Ω	½	23X20X101K	BTS-100	Decoupling
R27	10KΩ	½	23X20X103K		3rd. Video IF Coil Shunt
R28	150Ω	½	23X20X151K	BTS-150	3rd. Video IF Amp. Cathode
R29	100Ω	½	23X20X101K	BTS-100	Decoupling
R30	1Meg	½	23X20X105M	BTS-1Meg	AGC Network
R31	3300Ω	½	23X20X332K	BTS-3300	Video Det. Diode Load
R32	220KΩ	20% ½	23X20X224K	BTS-220K	Video Output Grid
R33	150Ω	½	23X20X151K	BTS-150	Video Output Cathode
R34	5600Ω	½	23X40X563K	BTS-5600	Video Output Plate
R35	1500Ω	1	23X30X152K	BTA-1500	Video Output Plate Decoupling
R36	100KΩ	20% ½	23X20X104M	BTS-100K	Picture Tube Cathode
R37	10KΩ	½	23X20X103K	BTS-10K	Picture Tube Grid

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: Hallicrafters PART No.	IRC PART No.	IDENTIFICATION CODES
R38	6800Ω	½	23X20X682K	BTS-6800	Voltage Divider
R39	47KΩ	½	23X20X473K	BTS-47K	Voltage Divider
R40	150Ω	½	23X20X151K	BTS-150	Sound IF Amp. Cathode
R41	22KΩ	½	23X20X223K		Sound IF Amp. Decoupling
R42	270Ω	½	23X20X271K	BTS-270	Balancing
R43	33KΩ	½	23X20X333K	BTS-33K	De-emphasis
R44	10KΩ	5% ½	23X20X103J	BTS-10K	5% Ratio Det. Diode Load
R45	10KΩ	5% ½	23X20X103J	BTS-10K	5% Ratio Det. Diode Load
R46	10Meg	20% ½	23X20X106M	BTS-10Meg	AF Amp. Grid
R47A	500KΩ	½	♦ 49A007		AF Amp. Plate
B	500KΩ	½			Output Grid
R48	270Ω	1	23X30X271K	BTA-270	Output Cathode
R49	160Ω	10	24BG162E	1 3/4A-1500	Voltage Divider - Wire Wound
R50	10KΩ	½	23X20X103K	BTS-10K	Isolation
R51	220KΩ	20% ½	23X20X224K	BTS-220K	Isolation
R52	2.2Meg	20% ½	23X20X225M	BTS-2.2Meg	Sync. Amp. Grid
R53	47KΩ	½	23X20X473K	BTS-47K	Sync. Amp. Plate
R54	270KΩ	½	23X20X274K	BTS-270K	Sync. Separator Cathode
R55	820KΩ	20% ½	23X20X824M	BTS-820K	Sync. Seperator Plate
R56	47KΩ	½	23X20X473K	BTS-47K	Sync. Clipper Grid
R57	470KΩ	½	23X20X474K	BTS-470K	Sync. Clipper Cathode
R58	220KΩ	½	23X20X224K	BTS-220K	Sync. Clipper Plate
R59	220KΩ	½	23X20X224K	BTS-220K	Sync. Clipper Plate
R60A	22KΩ	½	}		Horiz. Osc. Grid Cap.
B	820Ω	½	♦ 49A015		Integrator Network
C	3300Ω	½	}		Integrator Network
R61	1.2Meg	½			Integrator Network
R62	1Meg	20% ½	23X20X105M	BTS-1Meg	Vert. Osc. Grid - See Note 2
R63	4700Ω	½	23X20X472K	BTS-4700	Vert. Osc. Plate
R64	2.2Meg	20% ½	23X20X225M	BTS-2.2Meg	Blanking Network
R65	1000Ω	1	23X30X102K	BTA-1000	Vert.Output Cathode
R66	12KΩ	½	23X20X123K	BTS-12KΩ	Vert. Osc. Cathode
R67	120KΩ	1	23X30X3F124K	BTA-120K	Voltage Divider
R68	68KΩ	½	23X20X683K	BTS-68K	Voltage Divider
R69	330KΩ	½	23X20X334K	BTS-330K	Horiz.AFC Grid
R70	820KΩ	½	23X20X824M	BTS-820K	Horiz. AFC Grid
R71	82KΩ	1	23X30X682K	BTA-82K	Horiz.AFC Cathode
R72	330KΩ	1	23X30X3F334J	BTA-330K	Horiz.AFC Cathode
R73	390Ω	½	23X20X392K	BTS-3900	Horiz. AFC Filter
R74	330KΩ	½	23X20X334K	BTS-330K	Horiz. AFC Feedback
R75	150KΩ	½	23X20X154K	BTS-150K	Horiz. Osc. Grid
R76	47KΩ	1	23X30BF473K	BTA-47K	Horiz.Osc. Plate
R77	8200Ω	½	23X20X822K	BTS-8200	Horiz. Osc. Transformer Shunt
R78	470KΩ	20% ½	23X20X474M	BTS-470K	Horiz. Output Grid
R79	220Ω	3	24A925		Horiz. Output Cathode - Wire Wound
R80	15KΩ	2	23X40X153K	BTB-15K	Horiz. Output Screen
R81	47Ω	½	23X20X470K		Parasitic Suppressor
R82	2200Ω	1	23X30X222K	BTA-2200	Decoupling
R83	3.3Ω	½	23X20X033K		HV Rectifier Filament
R84	1Meg	1	23X30X105M		HV Filter
R85	750Ω	10	24A925	1 3/4A-750	Filter - Wire Wound
R86	150KΩ	½	23X20X154K	BTS-150K	Fuse Shunt
R87	20Ω	7.5	24A947		Voltage Dropping - Wire Wound - See Note 3
R88	270KΩ	½	23X20X274K	BTS-270K	Line Isolation
R89	10KΩ	½	23X20X103K	BTS-10K	Voltage Divider

Note 1. Some Models use a 150Ω Resistor in this application
Note 2. Some Models use a 820KΩ Resistor in this application
Note 3. Used only with English Make (Varley) Power Transformer
† Items R47A, R47B, C44A, C44B, C44C are combined in one unit
♦ Items R60A, R60B, R60C, C51A, C51B, C51C are combined in one unit.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA: Hallicrafters PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 1.75A	620VCT @ .190A Tapped @ 400VCT @ .080A	5VAC @3A	6.3VAC @8.7A SEC. 4 6.3VAC @1.2A	52C204		P-3072	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA: Hallicrafters PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	15Ω	1400Ω	55B115C 55C115 ①	A-8111	A-3066	T80-1 ②	Vert. Osc. Trans.
T3	580Ω Tap @ 4.7Ω, 9.4Ω, 11.6Ω, 35Ω, 37.5Ω,	0Ω	55D160 55C160 ③ 55C180 ④				Horiz. Output Trans.
T4	160Ω Tap 50		55B151	A-8141	A-3039		Vert. Output Trans.
T5A	20Ω		53C-237	D49	MDF-70		Horiz. Deflection Coils
T5B	47Ω		53-237 ⑤ 53-C197 ⑥				Vert. Deflection Coils

① Alternate Vert. Osc. Trans.
② Mount on top of Chassis.
③ ④ Alternate Horiz. Output Trans.
⑤ ⑥ Alternate Deflection yokes

DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Hallicrafters PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T6	4.1KΩ	3.5Ω	280Ω	.5Ω	55B150	A-3825 ⑦	A-3019 ⑦	R0-302 ⑧	⑦ Drill new mtg holes ⑧ Cut mtg tabs to duplicate original

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	Hallicrafters PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	PM	3Ω	85C103	ST-105 Mod. P5-X	5A1	
	CONE DIA.	V. C. DIA.				
SP1B	5"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∽)	PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.190ADC	85Ω	1.3 Hy.	56C116	C-2327	c-2994 ①	TR-4200①	① Drill one new mtg. hole

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Hallicrafters PART No.	MERIT PART No.	
L2	Ant. Trans.	0Ω	0Ω			
L3	IF Trap	.3Ω				
L4	Ant. Coils	0Ω				
L5	Ant. Coil	0Ω				
L6	Trap Coil	0Ω				
L7	RF Coil	0Ω				
L8	RF & Mixer Grid Coils	0Ω				
L9	Mixer Grid	0Ω				
L10	Osc. Coils	0Ω				
L11	Osc. Coil	0Ω				
L12	Fil. Choke	0Ω				
L13	1st. Video IF	.1Ω	.1Ω	51B1334		
L14	2nd. Video IF	.1Ω	.1Ω	50A475		
L15	Fil. Choke	0Ω		53A200		
L16	3rd. Video IF	.1Ω	.1Ω	51B1332 or 50A476		Includes Trap
L17	4th. Video IF	.2Ω	.2Ω	50A477		
L18	RF Choke	1.9Ω		53B008		
L19	Peaking Coil	7.5Ω		51A1256	† TV-181	Wound on 6.8K Resistor
L20	Peaking Coil	11Ω		51A1260	*TV-185	Wound on 2.2K Resistor
L21	Peaking Coil	11.2Ω		51A1257	♦TV-185	Wound on 15K Resistor
L22	4.5MC Trap	1Ω		51B1333 or 50B474	TV-151	
L23	Peaking Coil	17Ω		51A1259	* TV-188	Wound on 2.2K Resistor
L24	Sound IF	1Ω		51B1333 or 50B474	TV-151	
L25	Ratio Det.	4Ω	.6Ω	50C473	TV-110	Tap ④ 1Ω
L26	Horiz. Osc.	68Ω	40	51B242	TV-162	Tap ④ 20Ω
L27	Width Coil	13Ω		51-1489 or 51B1330		
L28	Horiz. Lin.	8.5Ω		51C1470 or 51A1470		

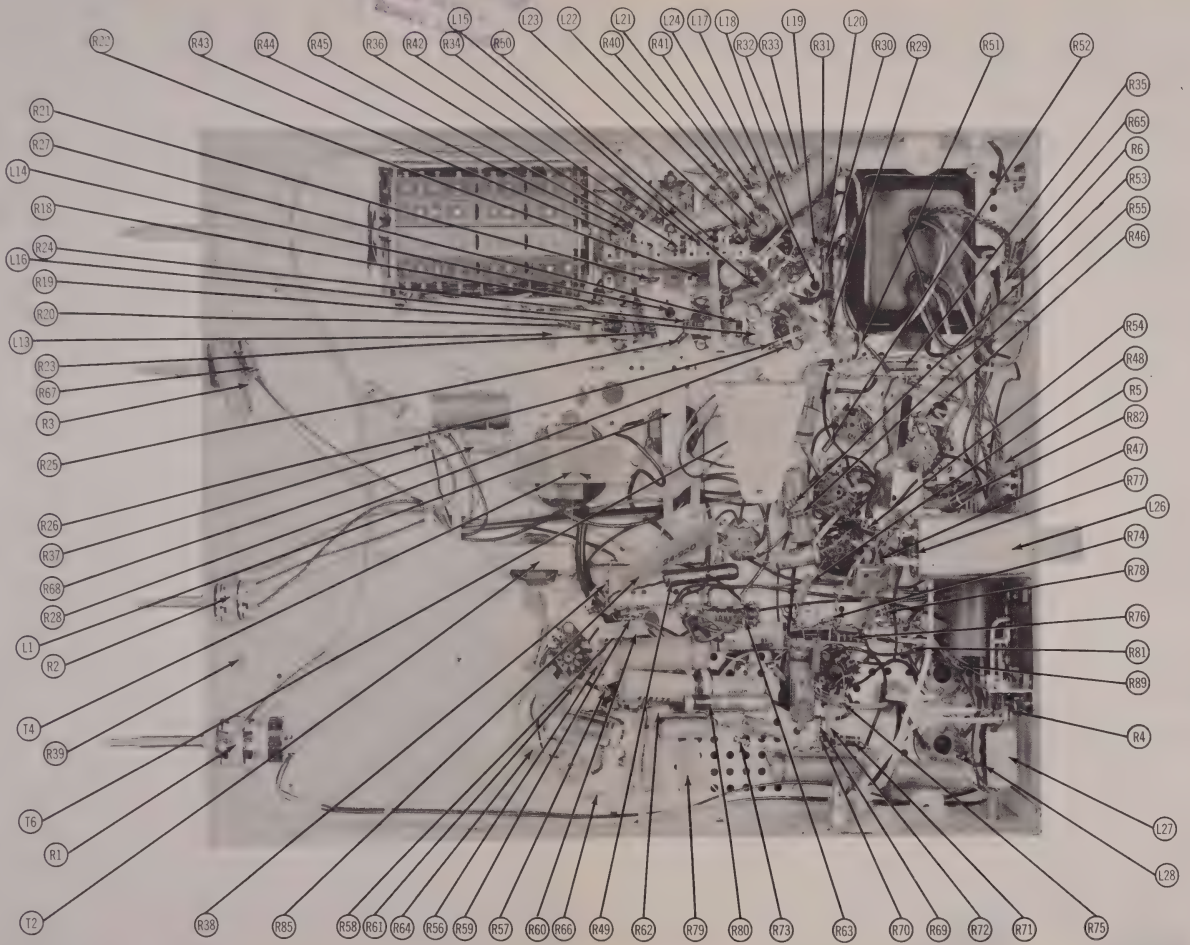
* Parallel with 2.2K resistor
♦ Parallel with 15K resistor
† Parallel with 6.8K Resistor

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Hallicrafters PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG Slo Blo Pigtail	1/4A. 125V.	39A344		315.250		MDV 1/4	

MISCELLANEOUS

ITEM No.	PART NAME	Hallicrafters PART No.	NOTES
M2A	RF Tuner	1D961	Dynamic
B	RF Tuner	1D1190	Shielded Dynamic (Alternate)
M3	Centering Magnet	21B138	
M4	Ion Trap	21A101	



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

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3924 MEADE
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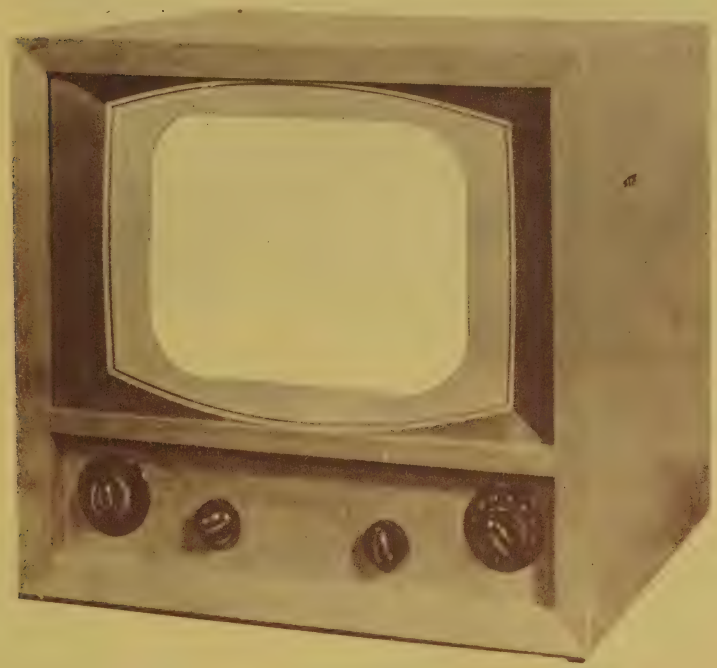

MODEL AR14L

HYDE PARK MODELS AR14L, AR17L, 17CD (2nd. Prod.), 17CRR (2nd. Prod.), 17ROG (2nd. Prod.), 20CD (2nd. Prod.), 203D (2nd. Prod.), 1000, 1001

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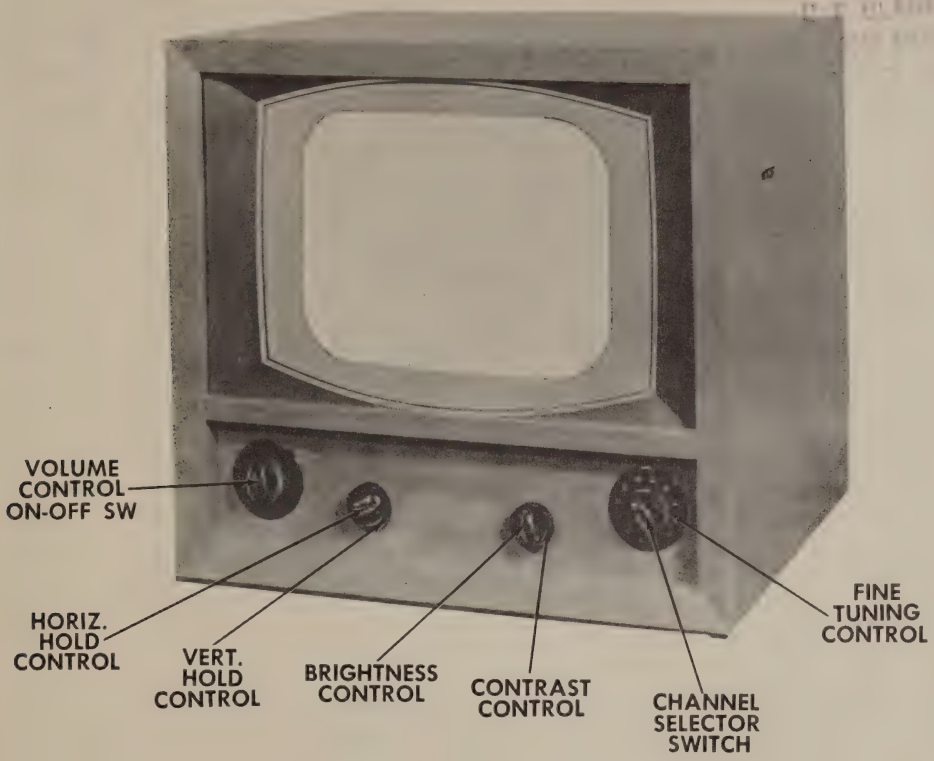

HYDE PARK MODELS AR14L, AR17L, 17CD (2nd. Prod.), 17CRR (2nd. Prod.), 17ROG (2nd. Prod.), 20CD (2nd. Prod.), 203D (2nd. Prod.), 1000, 1001

HYDE PARK AR14L

TRADE NAME	Hyde Park Models AR14L, AR17L, 17CD(2nd. Prod.), 17CRR(2nd. Prod.), 17R0G(2nd. Prod.), 20CD(2nd. Prod.), 203D (2nd. Prod,), 1000, 1001
SUPPLIER	Macys Dept. Store, New York, N. Y.
TYPE SET	Television Receiver
TUBES	Seventeen
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING 1.52 Amp. @ 117 Volts AC
TUNING RANGE	- Channels 2 thru 13

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Photographs (Continued)
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Resistor And Inductor Identification 8, 13
Schematic 2
Tube Placement Chart 3
Voltage And Resistance Measurements 6

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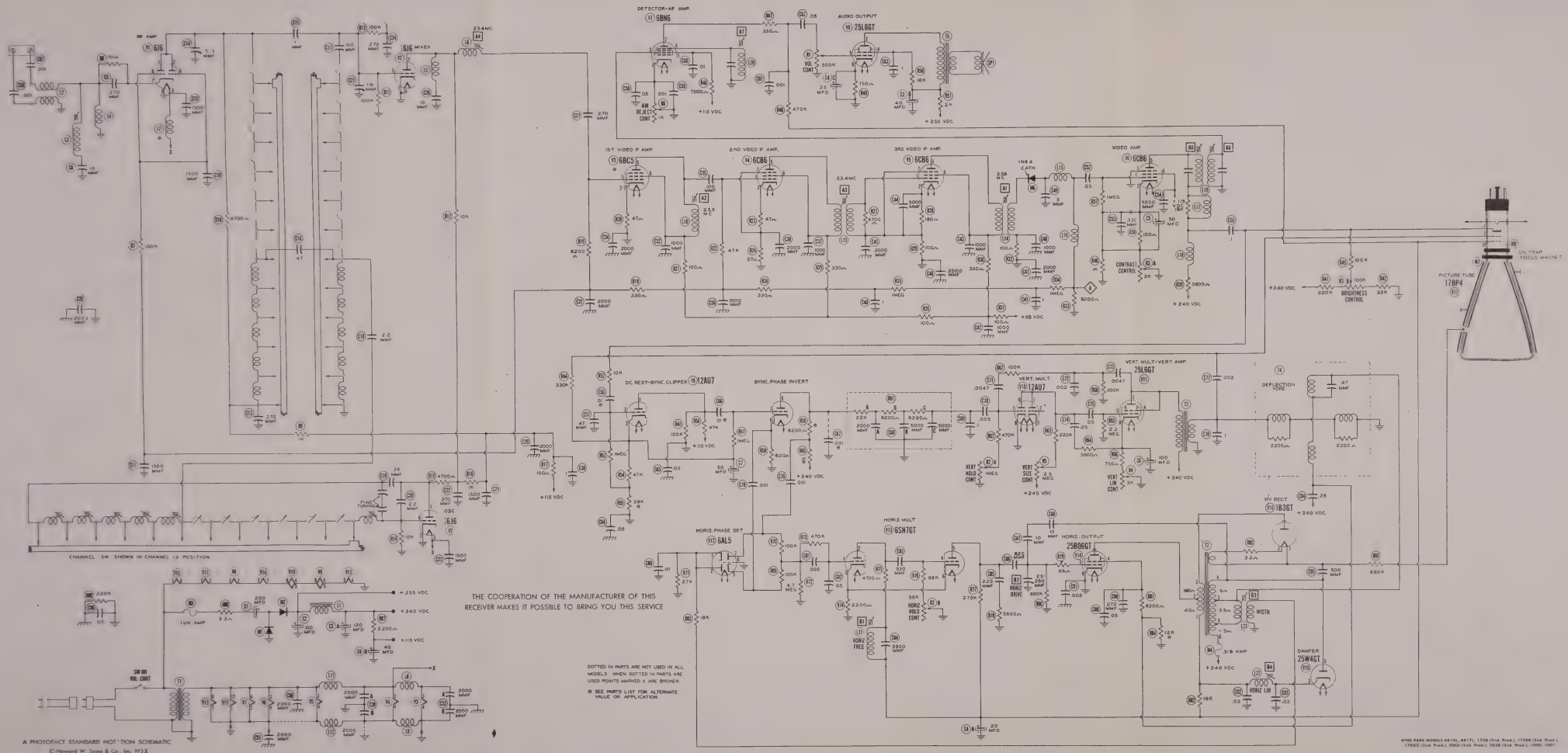
DETECTOR-AF AMP.
AUDIO OUTPUT
1ST VIDEO IF AMP
2ND VIDEO IF AMP.
3RD VIDEO IF AMP.
VIDEO AMP.
RF AMP.
6J6 MIXER
DC REST-SYNC. CLIPPER
SYNC. PHASE INVERT
VERT. MULT.
VERT MULT-VERT AMP
DEFLECTION YOKE
HORIZ. PHASE DET.
HORIZ MULT.
HORIZ. OUTPUT
HV RECT
DAMPER
PICTURE TUBE
17BP4
ION TRAP FOCUS MAGNET
CONTRAST CONTROL
BRIGHTNESS CONTROL
VERT HOLD CONT.
VERT SIZE CONT.
VERT LIN CONT.
HORIZ HOLD CONT.
HORIZ DRIVE
HORIZ FREQ.
HORIZ LIN
WIDTH
AM REJECT CONT.
VOL CONT.
CHANNEL SW SHOWN IN CHANNEL 13 POSITION
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED # ARE BROKEN
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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HYDE PARK MODELS AR14L, AR17L, 17CD (2nd. Prod.), 17CRR (2nd. Prod.), 17ROG (2nd. Prod.), 20CD (2nd. Prod.), 203D (2nd. Prod.), 1000, 1001

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TUBE PLACEMENT CHART

PROPERTY OF
ILLINOIS SHIP
3824 MEADE ST.
DENVER, COLORADO

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to disable the high voltage.

Use an isolation transformer to protect the test equipment.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) and replace it with a 6J6 which has pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to B-.	25.6MC (Unmod.)	Any	DC probe to Point (A). Common to B-.	A1, A2	Adjust for maximum deflection.
2.	"	"	23.4MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to B-.	24MC (10MC SWP)	21.6MC 25.6MC 26.1MC	Any	Vert. amp. to Point (A). Low side to B-.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT

Tune in a TV station and connect an attenuator in series with the antenna.
Attenuate the input until the sound signal drops below the limiting level of the 6BN6, this will be indicated by a hiss similar to superregeneration.
Adjust the sound take off transformer (A5 and A6) for maximum audio.
Adjust the quadrature coil (A7) for bestquality audio.
Adjust the AM rejection control for MINIMUM intercarrier buzz.
If during any of the above adjustments the signal rises above the limiting level, as indicated by the hiss disappearing, reduce the signal input until the hiss returns.

THE RF AND OSCILLATOR PORTION OF THIS RECEIVER HAS BEEN PRE-SET AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION IN THE FIELD IS NOT RECOMMENDED. IF MIS-ALIGNMENT OF THE TUNER IS SUSPECTED, CONSULT THE RECEIVER MANUFACTURER.

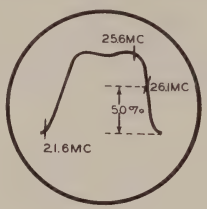


FIG. 1

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Turn the hold control to maximum clockwise, then slowly counter clockwise. The picture should synchronize after approximately 1/4 turn and should show 3 or 4 sloping bars just before the picture synchronizes.

Turn the hold control to maximum counter-clockwise and repeat the check. The picture should fall into sync after approximately 1/4 turn from each extreme , and should show, in each case, 3 or 4 sloping bars at the pull in point.

Adjust the horizontal drive trimmer (B2) for the best compromise between brightness and horizontal linearity.

Adjust the width slug (B3) until the picture fills the mask.

Adjust the horizontal linearity slug (B4) until the picture is symmetrical from left to right.

Slight readjustment of B2 may be necessary to obtain optimum results.

CHASSIS TOP VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	95VDC	95VDC	0V	6.3VAC	-1.6VDC	-1.6VDC	.3VDC		
V 2	6J6	90VDC	85VDC	6.3VAC	0V	-1.6VDC	§-4.2VDC	0V		
V 3	6BC5	-.6VDC	.1VDC	6.3VAC	0V	110VDC	110VDC	.1VDC		
V 4	6CB6	-.6VDC	.6VDC	6.3VAC	0V	105VDC	105VDC	.2VDC		
V 5	6CB6	.8VDC	2.3VDC	6.3VAC	0V	107VDC	107VDC	.8VDC		
V 6	6CB6	.5VDC	9.4VDC	6.3VAC	0V	190VDC	115VDC	0V		
V 7	6BN6	8VDC 0V	0V	0V	6.3VAC	65VDC 60VDC	0V	360VDC 20VDC		
V 8	25L6GT	0V	45VAC	140VDC	115VDC	0V	0V	69VAC	8VDC	
V 9	12AU7	75VDC	.6VDC	9.5VDC	6VAC	6VAC	150VDC	1.8VDC	12VDC	12VAC
V 10	12AU7	175VDC 35VDC	0V	0V	12VAC	12VAC	175VDC 35VDC	-40VDC -3VDC	0V	19VAC
V 11	25L6GT	0V	69VAC	235VDC 215VDC	235VDC 215VDC	0V	240VDC 20VDC	92VAC	30VDC 20VDC	
V 12	6AL5	.1VDC	.1VDC	6VAC	0V	4.6VDC	0V	-3.8 VDC		
V 13	6SN7GT	.2VDC	320VDC	15VDC	-3.2VDC	125VDC	15VDC	0V	6.3VAC	
V 14	25BQ6GT	0V	45VAC	0V	145VDC	-28VDC	0V	19VAC	0V	TOP CAP *
V 15	25W4GT	0V	0V	480VDC	0V	235VDC	235VDC	117VAC	92VAC	
V 16	1B3GT	* DO NOT MEASURE								
V 17	17BP4	0V	3.8VDC	PIN 10 355VDC	PIN 11 90VDC	PIN 12 6.3VAC				

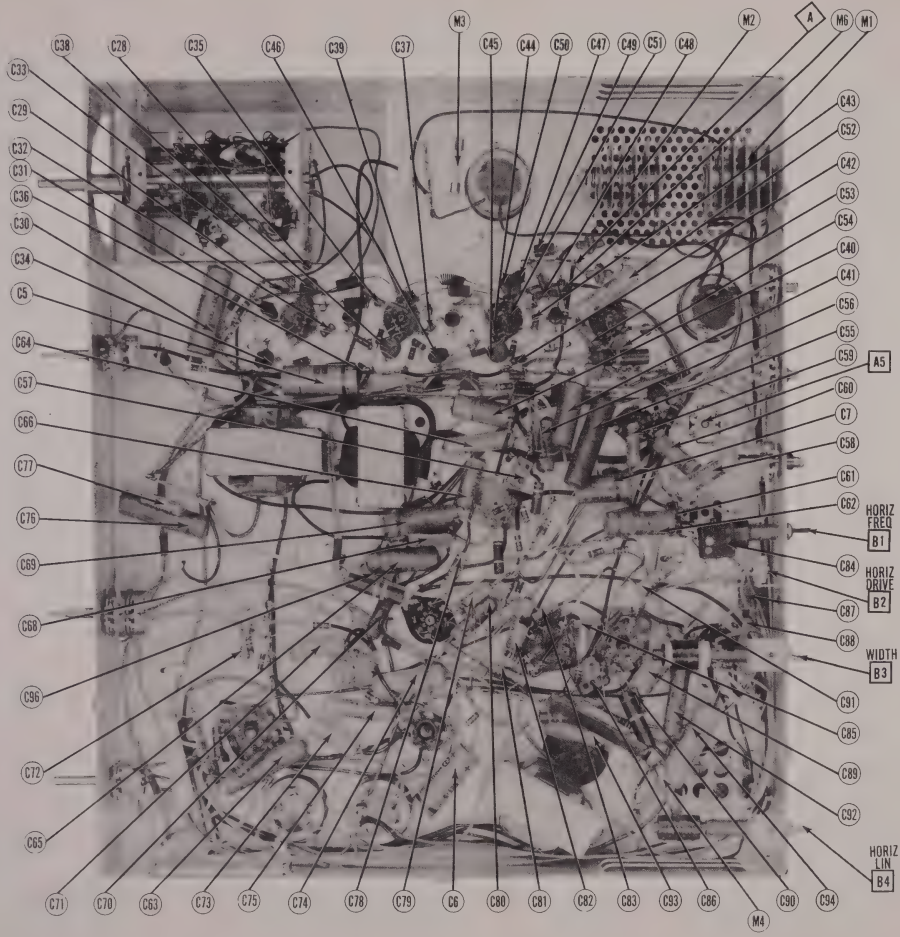
§ TAKEN WITH VACUUM TUBE VOLTMETER
* DO NOT MEASURE
VOLTAGE AND RESISTANCE MEASUREMENT ARE TAKEN WITH PICTURE TUBE REMOVED.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	†3.4KΩ	†3.4KΩ	0Ω	.2Ω	2.2Meg	2.2Meg	55Ω		
V 2	6J6	†8KΩ	†13KΩ	.2Ω	0Ω	100KΩ	10KΩ	0Ω		
V 3	6BC5	2Meg	47Ω	.2Ω	0Ω	†2.6KΩ	†2.6KΩ	47Ω		
V 4	6CB6	2Meg	75Ω	.2Ω	0Ω	†2.8KΩ	†2.8KΩ	27Ω		
V 5	6CB6	100Ω	280Ω	.2Ω	0Ω	†2.7KΩ	†2.7KΩ	100Ω		
V 6	6CB6	1Meg	750Ω	.2Ω	0Ω	†5.7KΩ	†2.3KΩ	0Ω		
V 7	6BN6	1KΩ 0Ω	2.6Ω	0Ω	.2Ω	†9.8KΩ	3.8Ω	#490KΩ		
V 8	25L6GT	Inf.	18Ω	†2.3KΩ	†20KΩ	0Ω	Inf.	25Ω	150Ω	
V 9	12AU7	40KΩ	1Meg	40KΩ	5Ω	5Ω	†7.3KΩ	1.1Meg	820Ω	8Ω
V 10	12AU7	†220KΩ †2.7Meg	Inf.	Inf.	8Ω	8Ω	†220KΩ †2.7Meg	1.5Meg	0Ω	11Ω
V 11	25L6GT	Inf.	25Ω	† 720Ω	†720Ω	2.2Meg	† 0Ω †2.5Meg	26Ω	5.8KΩ 750Ω	
V 12	6AL5	11KΩ	11KΩ	5Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V 13	6SN7GT	5.2Meg	†23KΩ	2.2KΩ	120KΩ	#290KΩ	2.2KΩ	0Ω	.2Ω	
V 14	25BQ6GT	Inf.	18Ω	Inf.	†6.3KΩ	680KΩ	5.6KΩ	11Ω	0Ω	TOP CAP #60Ω
V 15	25W4GT	Inf.	Inf.	110KΩ	Inf.	†95Ω	†130Ω	22Ω	26Ω	
V 16	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #420Ω
V 17	17BP4	0Ω	450KΩ	PIN 10 #18KΩ	PIN 11 200KΩ	PIN 12 .2Ω				

† MEASURED FROM OUTPUT OF M2
# MEASURED FROM PIN 3 OF V15

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

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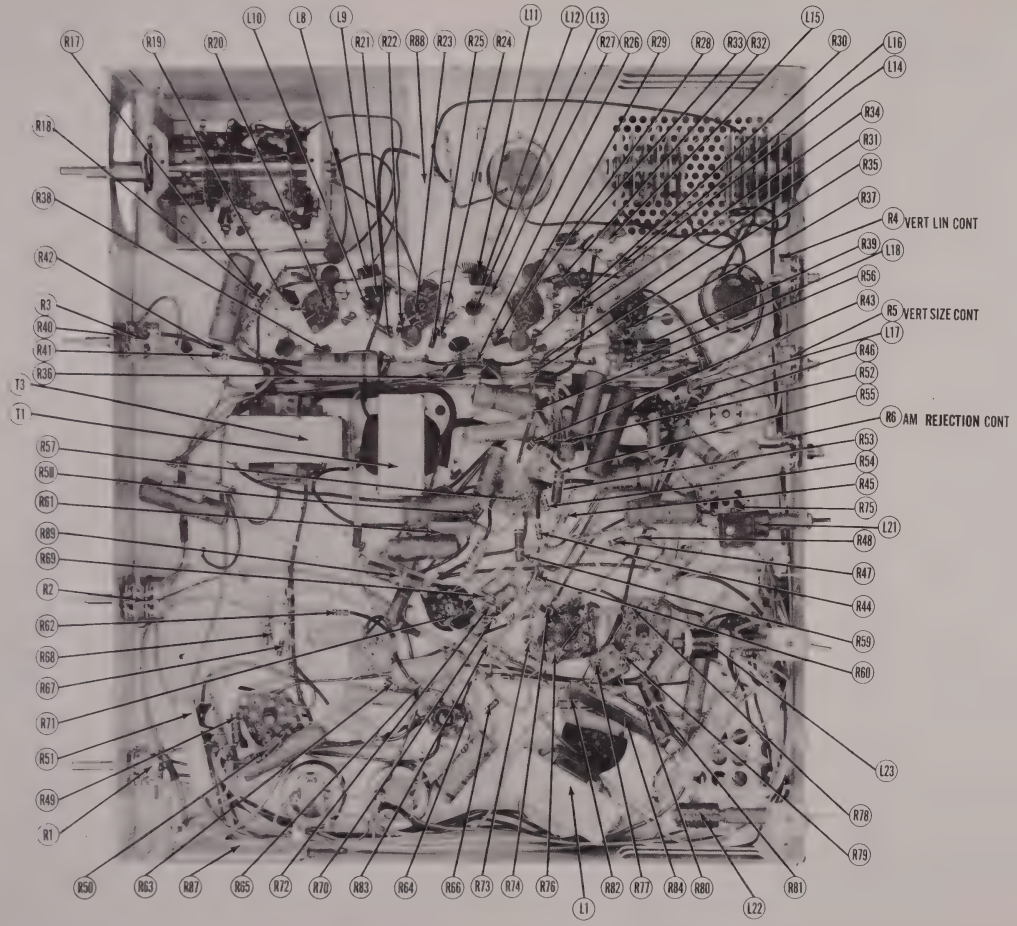
L. F. [illegible]



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

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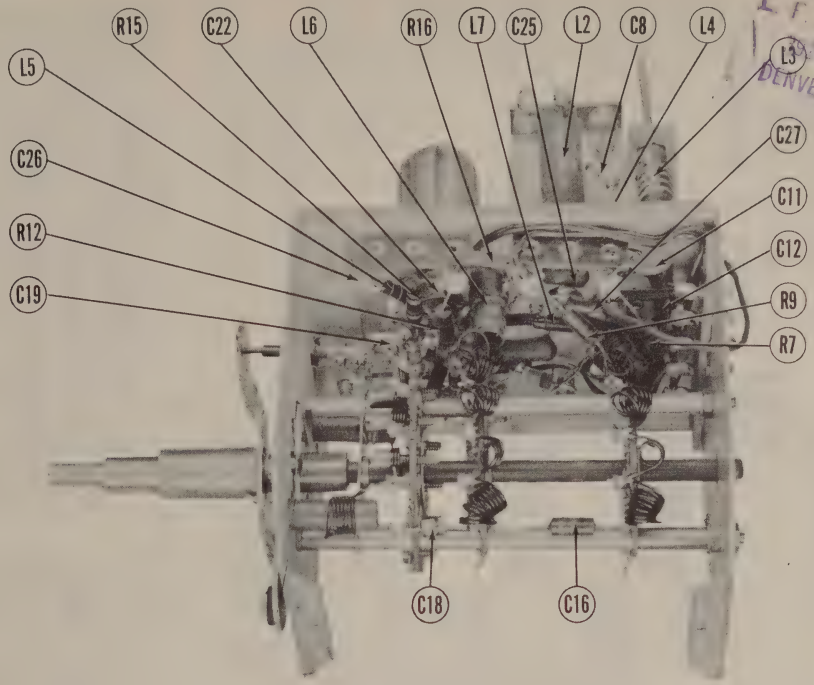
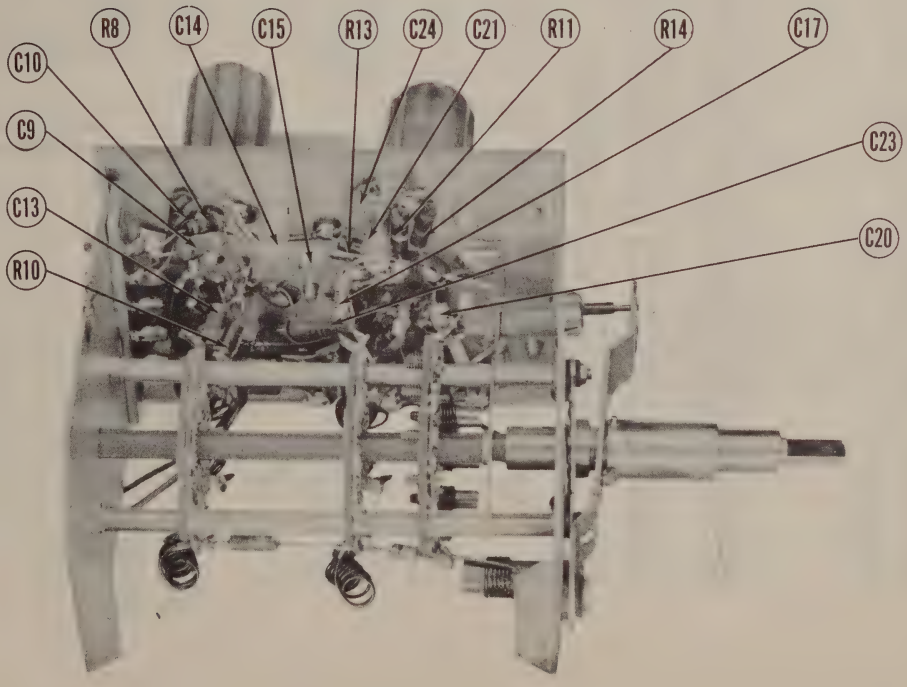


RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HYDE PARK PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	R.F Amplifier		6J6	7BF	
V2	Converter		6J6	7BF	
V3A	1st Video I.F Amp.		6BC5	7BD	
B	1st Video I.F Amp.		6AG5	7BD	
V4	2nd Video I.F Amp.		6CB6	6CK	
V5	3rd Video I.F Amp.		6CB6	6CK	
V6	Video Amplifier		6CB6	6CK	
V7	Detector -A.F Amp.		6BN6	7DF	
V8	Audio Output		25L6GT	7AC	
V9	DC Restorer - Sync. Clipper - Sync. Phase Inverter		12AU7	9A	
V10	Vert. Mult.		12AU7	9A	
V11	Vert. Mult.-Vert. Output		25L6GT	7AC	
V12	Horiz. Phase Det.		6AL5	6BT	
V13	Horiz. Mult.		6SN7GT	8BD	
V14	Horiz. Output		25B26GT	6AM	
	Damper		25W4GT	4CG	
V16	H.V. Rectifier		1B3GT	7CB	
V17	Picture Tube		17BP4	12D	Model AR14L uses 14" picture tube

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	VOLT	HYDE PARK PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	200	150		E4AU13		UPE10U3/5		TVL-1431	Voltage Divider Cap
C2	150	300		E4AU14		UPE13S35		TVL-1584	Filter
C3A	120	500		AFH244G		UPT125430		RU62	▲ Filter
B	40	300		PRS250/20					▲ Filter
C4A	20	450		AFH884A		UP4245C		TVL-4729	■ Decoupling
B	40	300							▲ Filter
C	25	35							▲ Output Cathode
C5	50	25		PRS25/50		BR50A		TVA-1306	V. Amp. Cathode
C6	100	25		PRS25/100		BR25A		TVA-1207	Vert. Amp. Cathode
C7	50	25		PRS25/50		BR50A		TVA-1206	DC Res. Cathode
C8	10			SI10	D6-100		GP1K-10	19C19	Fixed Trimmer
C9	270			SI270	D6-271		GP2K-270	19C31	RF Amp. Cathode
C10	1500			SI1500	D6-152		GP5L-0015	29C8	AGC Filter
C11	1500			SI1500	D6-152		GP5L-0015	29C8	AGC Filter
C12	1500			SI1500	D6-152		GP5L-0015	29C8	RF Amp. Fil.
C13	270			SI270	D6-271		GP2K-270	19C31	RF Amp. Plate Dec.
C14	3-3				829-3				Variable Trimmer
C15	1				TCZ-1				RF Coupling
C16	.47				TCZ-.5				RF Coupling
C17	100			SI100	D6-101		GP1K-100	19C11	RF Coupling
C18	2.2				TCZ-2.2				Osc. Coupling
C19	39			SI39	D6-390		GP1K-39		Osc. Feedback
C20	2.2				TCZ-2.2				Osc. Feedback
C21	1-6				825-6				Variable Trimmer
C22	270			SI270	D6-271		GP2K-270	19C31	Conv. Decoupling
C23	1500			SI1500	D6-152		GP5L-0015	29C8	Conv. Fil. Bypass
C24	270			SI270	D6-271		GP2K-270	19C31	RF Bypass
C25	1500			SI1500	D6-152		GP5L-0015	29C8	RF Bypass
C26	10			SI10	D6-100		GP1K-10	19C3	Fixed Trimmer
C27	270			SI270	D6-270		GP2K-270	19C31	IF Coupling
C28	2000			SI2000	D6-202	1WSD2	GP2L-002	29C2	RF Bypass
C29	2000			BPD-002	DD-202	1WSD2	80L-002	29C2	RF Bypass
C30	.1	600		PS88-1	DF-104	PTE5P1		6TM-P1	RF Bypass
C31	2000			BPD-005	DD-202	1WSD2	80L-002	29C3	AGC Filter
C32	1000			SI1000	D6-102	1WSD1	GP2L-001	19C1	1st V. IF Dec.
C33A	2000			BPD-2X00	DD-2-202	1WSD2	81Z-2X002	29C5	1st V. IF Fil.
B	2000					1WSD2			1st V. IF Fil.
C34	2000			BPD-002	DD-202	1WSD2	80L-002	29C2	RF Bypass
C35	100			SI100	D6-101	1WSD1	GP1K-100	19C11	IF Coupling
C36	1000			SI1000	D6-102	1WSD1	GP2L-001	19C1	AGC Filter
C37	1000			SI1000	D6-102	1WSD1	GP2L-001	19C1	2nd V. IF Dec.
C38	2000			BPD-002	DD-202	1WSD2	80L-002	29C3	2nd V. IF Cathode
C39A	2000			BPD-2X002	DD-2-202	1WSD2	81Z-2X002	29C5	2nd V. IF Fil.
B	2000					1WSD2			2nd V. IF Fil.
C40	.1	300		PS88-1	DF-104	PTE4P1		2TM-P1	AGC Filter
C41	.1	300		PS88-1	DF-104	PTE4P1		2TM-P1	AGC Filter
C42	1000			SI1000	D6-102	1WSD1	GP2L-001	19C1	RF Bypass
C43	1000			SI1000	D6-102	1WSD1	GP2L-001	19C1	3rd V. IF Dec.
C44	5000			BPD-005	DD-502	1D5D5	81L-005	29C1	3rd V. IF Cathode
C45	2000			BPD-002	DD-202	1WSD2	80L-002	29C2	3rd V. IF Cathode
C46	2000			BPD-002	DD-202	1WSD2	80L-002	29C2	RF Bypass
C47	2000			BPD-002	DD-202	1WSD2	80L-002	29C2	RF Bypass
C48	1000			SI1000	D6-102	1WSD1	GP2L-001	19C1	RF Bypass
C49	5	500		1468-000005	TCZ-4.7	5WSY5	GP5L-5	M5-55	V. Det. Filter
C50	2000			BPD-002	DD-202	1WSD2	80L-002	29C2	3rd V. IF Fil.
C51	2000			BPD-002	DD-202	1WSD2	80L-002	29C2	3rd V. IF Fil.
C52	05	600		PS88-05	DF-503	PTE5S5		6TM-S5	Video Coupling
C53	330	500		1468-00035	D6-331	5WS73	GP2K-330	1FM-335	V. Amp. Cathode
C54	5000			BPD-005	DD-502	1D5D5	81L-005	29C1	RF Bypass
C55	.1	600		PS88-1	DF-104	PTE5P1		6TM-P1	Video Coupling *
C56	.01	600		PS88-01	D6-103	PTE5S1	82L-01	6TM-S1	Video Coupling *
C57	.47	500		1466-00005	D6-471	5WS25	GP1K-47	1FM-45	Sync. Clipper-DC Res. Grid
C58	.05	600		PS88-05	DF-503	PTE5S5		6TM-S5	Det.-A.F Amp. Cath.
C59	.001	600		PS88-001	D6-102	PTE5D1	GP2L-001	6TM-D1	Det.-A.F Amp. Cathode
C60	.01	600		PS88-01	D6-103	PTE5S1	82L-01	6TM-S1	Det.- A.F Amp. Screen
C61	.001	600		PS88-001	D6-102	PTE5D1	GP2L-001	6TM-D1	De-emphasis
C62	.05	600		PS88-05	DF-503	PTE5S5		6TM-S5	Audio Coupling
C63	.1	600		PS88-1	DF-104	PTE5P1		6TM-P1	Output Screen
C64	.05	600		PS88-05	DF-503	PTE5S5		6TM-S5	RF Bypass
C65	.05	600		PS88-05	DF-503	PTE5S5		6TM-S5	RF Bypass
C66	.01	600		PS88-01	D6-103	PTE5S1	82L-01	6TM-S1	Sync. Coupling *
C67	.001	600		PS88-001	D6-102	PTE5D1	GP2L-001	6TM-D1	Sync. Phase Inv. Plate †

PARTS LIST AND DESCRIPTIONS

ITEM No.	RATING: CAP.	VOLT	REPLACEMENT DATA: HYDE PARK PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C68A	2000		†	P88-002	†	PTE5D2	GP2M-002	6TM-D2	Integrator Net
B	5000			P88-005	PC-100	PTE5D5	81L-005	6TM-D5	Integrator Net
C	5000			P88-005		PTE5D5		6TM-D5	Integrator Net
C69	.1	600		P88-1	DF-104	PTE5P1		6TM-P1	Integrator Net
C70	.005	600		P88-005	D6-502	PTE5D5	81L-005	6TM-D5	Vert. MV Grid
C71	.0047	1000		P1068-0047		PTE10D5		MD-D47	Vert. MV Feedback
C72	.002	600		P88-002	D6-202	PTE5D2	GP2M-002	6TM-D2	Voltage Divider
C73	.0047	1000		P1068-0047		PTE10D5		MD-D47	Vert. MV Feedback
C74	.05	600		P88-05		PTE5S5		6TM-S5	Vert. Discharge
C75	.05	600		P88-05	DF-503	PTE5S5		6TM-S5	Vert. Sweep Coupling
C76	.1	600		P88-1	DF-104	PTE5P1		6TM-P1	Fixed Trimmer
C77	.002	600		P88-002	D6-202	PTE5D2	GP2M-002	6TM-D2	Vert. Sweep Coupling
C78	.001	600		P88-001	D6-102	PTE5D1	GP2L-001	6TM-D1	Hor. Sync. Coupling
C79	.001	600		P88-001	D6-102	PTE5D1	GP2L-001	6TM-D1	Hor. Sync. Coupling
C80	.01	600		P88-01	D6-103	PTE5S1	82L-01	6TM-S1	Voltage Divider
C81	.005	600		P88-005	D6-502	PTE5D5	81L-005	6TM-D5	AFC Filter
C82	.03	600		P88-05	DF-503	PTE5S5		6TM-S5	AFC Filter
C83	330	500		1466-00035	D6-331	5WS73	GP2K-330	1FM-335	Hor. MV Feedback
C84	3900	500		1464-004		1DR5D4		MD-24	Fixed Trimmer
C85	220	500		SI220	D6-221	5WS725	GP2K-220	M5-325	Horiz. Discharge
C86	820	500				1WS78		M5-38	Horiz. Sweep Coupling
C87	10	1500		1469-HV-00900					Horiz. Feedback
C88	10	1500		1469-HV-00900					Horiz. Feedback
C89	.05	600		P88-05	DF-503	PTE5S5		6TM-S5	Horiz. Output Screen
C90	270	500		SI270	D6-271	5WS725	GP2K-270	1FM-325	Horiz. Output Screen
C91	.005	600		P88-005	D6-502	PTE5D5	81L-005	6TM-D5	RF Bypass
C92	.03	600		P88-03		PTE5S3		6TM-S3	Damper Filter
C93	.03	600		P88-03		PTE5S3		6TM-S3	Damper Filter
C94	.25	400		P88-25				4TM-P25	Hor. Sweep Coupling
C95	500	20000		HV20C	TV2-502				H. V. Filter
C96	.05	600		P88-05	DF-503	PTE5S5		6TM-S5	RF Bypass
C97	.001	600		P88-001	D6-102	PTE5D1	GP2L-001	6TM-D1	Ant. Coupling
C98	.001	600		P88-001	D6-102	PTE5D1	GP2L-001	6TM-D1	Ant. Coupling

* Some models use .05MFD in this application.
† Not used in all models.
‡ Items C68A, C68B, C68C, R6A, R6B and R6C are combined into one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: HYDE PARK PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	P-7	Q13-133	AG-80-Z	B-80-S	Volume Control
B	Shaft		Not req.	Not req.	FS-2	Not req.	Attach to R1A Per Instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R1A Per Instructions
				Concentrikit			
R2A	1Meg	½		Bil-127 *			Vertical Hold Control - Front
B	50KΩ	½	PD-5	Bil-123 *	RTV-145	SBB-584	Horizontal Hold Control - Rear
C	Shaft End			E-187 *			Attach Per Instructions in "Concentrikit"
				Concentrikit			
R3A	2000Ω	½		Bil-112 *			Contrast Control - Front
B	100KΩ	½	PD-6	Bil-138 *	RTV-253		Brightness Control - Rear
C	Shaft End			E-187 *			Attach Per Instructions in "Concentrikit"
R4A	5000Ω	½	F-2	QU-114	AM-19-S	AN-10	Vertical Linearity Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R4A Per Instructions
R5A	2.5Meg	½	F-5	QU-220	AG-84-S	AN-83	Vertical Size Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A Per Instructions
R6A	1000Ω	½	F-12	QU-108	AG-8-S	AN-5	AM Rejection Control
B	Shaft		Not req.	FKS-1/4	AK-1		Attach to R6A Per Instructions

* Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: HYDE PARK PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R7	150KΩ	20%			RF Amp. Grid
R8	51Ω	5%			RF Amp. Cathode
R9	10000	20%		BTS-1000	RF Amp. Plate Decoupling
R10	47000	20%		BTS-4700	RF Coil Shunt
R11	100KΩ	20%			Mixer Grid
R12	10KΩ	20%			Mixer Plate
R13	10KΩ	20%		BTS-10K	Series Test Point
R14	10KΩ	20%			Osc. Grid
R15	6700Ω			BTS-6700	Osc. Plate
R16	1000Ω	20%		BTS-1000	Decoupling
R17	100Ω	20%		BTS-100	Decoupling
R18	330Ω			BTS-330	AGC Network
R19	8200Ω				1st Video IF Amp. Grid
R20	47Ω				1st Video IF Amp. Cathode
R21	100Ω	20%		BTS-100	1st Video IF Amp. Decoupling
R22	47KΩ				2nd Video IF Amp. Grid
R23	47Ω				2nd Video IF Amp. Cathode
R24	27Ω				2nd Video IF Amp. Cathode
R25	330Ω			BTS-330	2nd Video IF Amp. Decoupling
R26	100Ω	20%		BTS-100	Decoupling
R27	4700Ω			BTS-4700	3rd Video IF Transformer Shunt
R28	180Ω			BTS-180	3rd Video IF Amp. Cathode
R29	1000Ω	20%		BTS-1000	3rd Video IF Amp. Plate
R30	330Ω			BTS-330	3rd Video IF Amp. Decoupling
R31	100Ω	20%		BTS-100	Decoupling
R32	100Ω	20%		BTS-100	Video Det. Diode Load
R33	82000Ω	20%		BTS-8200	Video Det. Diode Load
R34	1Meg			BTS-1Meg	AGC Network
R35	1Meg			BTS-1Meg	AGC Network
R36	330Ω			BTS-330	AGC Network
R37	1Meg			BTS-1Meg	Video Amp. Grid
R38	100Ω	20%		BTS-100	Video Amp. Cathode
R39	5600Ω			BTS-5600	Video Amp. Plate
R40	1000Ω			BTS-1000	Contrast Control Shunt
R41	220KΩ			BTS-220K	Voltage Divider
R42	33KΩ			BTS-33K	Voltage Divider
R43	100KΩ			BTS-100K	DC Restorer Diode Load

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: HYDE PARK PART No.	IRC PART No.	IDENTIFICATION CODES
R44	330KΩ	½		BTS-330K	Picture Tube Grid
R45	100KΩ	½		BTS-100K	Picture Tube Cathode
R46	7500Ω	1			A.F Amp. Screen
R47	330Ω	½			Parasitic Suppressor
R48	470KΩ	½		BTA-470K	A.F Amp. Plate
R49	150Ω	1		BTA-150	Output Cathode
R50	18KΩ	20% 1		BTA-18K	Output Screen
R51	2000Ω	10		1 3/4A-2000	Output Decoupling - Wire Wound
R52	10KΩ	½		BTS-10K	Isolation
R53	1Meg	½		BTS-1Meg	Sync. Clipper Grid
R54	47KΩ	½		BTS-47K	Sync. Clipper Cathode
R55	39KΩ	½		BTA-39K	Sync. Clipper Cathode - See Note 1
R56	47KΩ	½		BTS-47K	Sync. Clipper Plate
R57	1Meg	½		BTS-1Meg	Sync. Phase Inv. Grid
R58	82Ω	½		BTS-820	Sync. Phase Inv. Cathode
R59	6200Ω	½			Sync. Phase Inv. Plate - See Note 2
R60	1000Ω	½		BTS-1000	Sync. Phase Inv. Plate - See Note 3
R61A	22KΩ	½		BTS-22K	Integrator
B	8200Ω	½		BTS-8200	Integrator
C	8200Ω	½		BTS-8200	Integrator
R62	470KΩ	20% ½		BTS-470K	Vertical Osc. Grid
R63	220KΩ	½		BTS-220K	Vertical Osc. Plate
R64	5600Ω	½		BTS-5600	Vertical Peaking
R65	2.2Meg	½		BTS-2.2Meg	Vertical Output Grid
R66	75Ω	½			Vertical Output Cathode
R67	100KΩ	½		BTS-100K	Vertical Feedback
R68	100KΩ	½		BTS-100K	Differentiator
R69	100KΩ	½		BTS-100K	Horizontal Phase Det. Diode Load
R70	100KΩ	½		BTS-100K	Horizontal Phase Det. Diode Load
R71	27KΩ	½		BTS-27K	Horizontal Phase Det. Diode Load
R72	4.7Meg	½		BTS-4.7Meg	Horizontal Phase Det. Diode Load
R73	470KΩ	½		BTS-470K	Horizontal AFC Filter
R74	2200Ω	½		BTS-2200	Horizontal MV Cathode
R75	4700Ω	½		BTS-4700	Horizontal MV Plate
R76	68KΩ	½		BTS-68K	Horizontal MV Grid
R77	270KΩ	½		BTS-270K	Horizontal MV Plate
R78	5600Ω	20% ½		BTS-5600	Horizontal Peaking
R79	68Ω	½			Parasitic Suppressor
R80	680KΩ	½		BTS-680K	Horizontal Output Grid
R81	6200Ω	3			Horizontal Output Screen
R82	18KΩ	1		BTA-18K	Decoupling
R83	18KΩ	2		BTS-18K	Horizontal Feedback
R84	12KΩ	5		1 3/4A-12K	Voltage Divider - Wire Wound - See Note 4
R85	3.3Ω	3			HV Rectifier Filament
R86	1MΩ	2			HV Filter
R87	2200Ω	10		1 3/4A-2200	Decoupling - Wire Wound
R88	3.3Ω	5			Surge Limiter - Wire Wound
R89	220KΩ	2		BTS-220K	Isolation

† Items R45A, R45B, R45C, C68A, C68B and C68C are combined into one unit.
Note 1. Some models use 47KΩ resistor in this application.
Note 2. Some models use 4700Ω resistor in this application.
Note 3. Some models use 2200Ω resistor in this application.
Note 4. Some models use 18KΩ resistor in this application.

TRANSFORMER (FILAMENT)

ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA: HYDE PARK PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ .2A	6.3VAC @ 3.7A						F-833

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA: HYDE PARK PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	400Ω	23Ω					Horiz. Output Trans.
	Tap 40Ω	Taps 11.5Ω and 17Ω					
		0Ω					
T3	650Ω	10Ω					Vertical Output Trans.
T4A	35Ω						Horiz. Deflection Coil
B	96Ω						Vertical Deflection Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	REPLACEMENT DATA: HYDE PARK PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T5	3.6KΩ	3.2Ω	275Ω	.5		A-3877	A-2928 ①	R-2 ①	① Drill one new mounting hole.

HYDE PARK MODELS AR14L, AR17L, 17CD (2nd. Prod.), 17CRR (2nd. Prod.), 17ROG (2nd. Prod.), 20CD (2nd. Prod.), 203D (2nd. Prod.), 1000, 1001

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	HYDE PARK PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.220A	70Ω	4.2 Henries		C-1411 ① ②		TR3300 ① ②	① Drill new mounting hole ② Mount above chassis.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	HYDE PARK PART No.	MERIT PART No.	IRC PART No.	
L2	Ant. Coil	1.3Ω	1.3Ω				
L3	FM Trap	0Ω					
L4	RF Choke	.6Ω				CLA	.82 Microhenry
L5	Conv. Plate Coil	0Ω					
L6	1st Video IF	.6Ω					
L7	Fil. Choke	0Ω					Not used in all models
L8	Fil. Choke	0Ω					
L9	Fil. Choke	0Ω					
L10	2nd Video IF	.2Ω					
L11	Fil. Choke	0Ω					
L12	Fil. Choke	0Ω					
L13	3rd Video IF	.3Ω	.3Ω				
L14	4th Video IF	.4Ω	.4Ω				
L15	Peaking	7.4Ω		LP-9			
L16	Peaking	9.8Ω		LP-10			
L17	Peaking	8.3Ω		LP-11			Wound on 18KΩ resistor
L18	Peaking	11Ω		LP-12			
L19	Sound IF	2.7Ω	2.6Ω	LTO-3			
L20	Quadrature Coil	3.8Ω		LIF-8			
L21	Horiz. Freq.	49Ω					
L22	Horiz. Lin.	22Ω					
L23	Width Coil	28Ω	28Ω				

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT	HYDE PARK PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	
M1	.225A		NF-5	6Q4	1028A	
M2	.225A		NF-5	6Q4	1028A	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA						
			HYDE PARK PART No.		LITTELFUSE PART No.		BUSS PART No.		
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER	
M3	3AG	1 1/4A			31501.5		MDV 1 1/4		
M4	3AG	.375A			318.375		GJV 3/8		

MISCELLANEOUS

ITEM No.	PART NAME	HYDE PARK PART No.	NOTES
M5	RF Tuner		
M6	Crystal		1N-64 (Video Detector)
M7	Focus Magnet	LF-7	
M8	Ion Trap		
B2	Trimmer	CT-1	Horizontal Drive (25-280MMF)

PHOTOFACT* Folder

KAYE-HALBERT
MODEL 012 (Ch. 243)

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MODEL 012

KAYE-HALBERT
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DATE 6-52 SET 169 FOLDER 9

KAYE-HALBERT MODEL 012 (Ch. 243)

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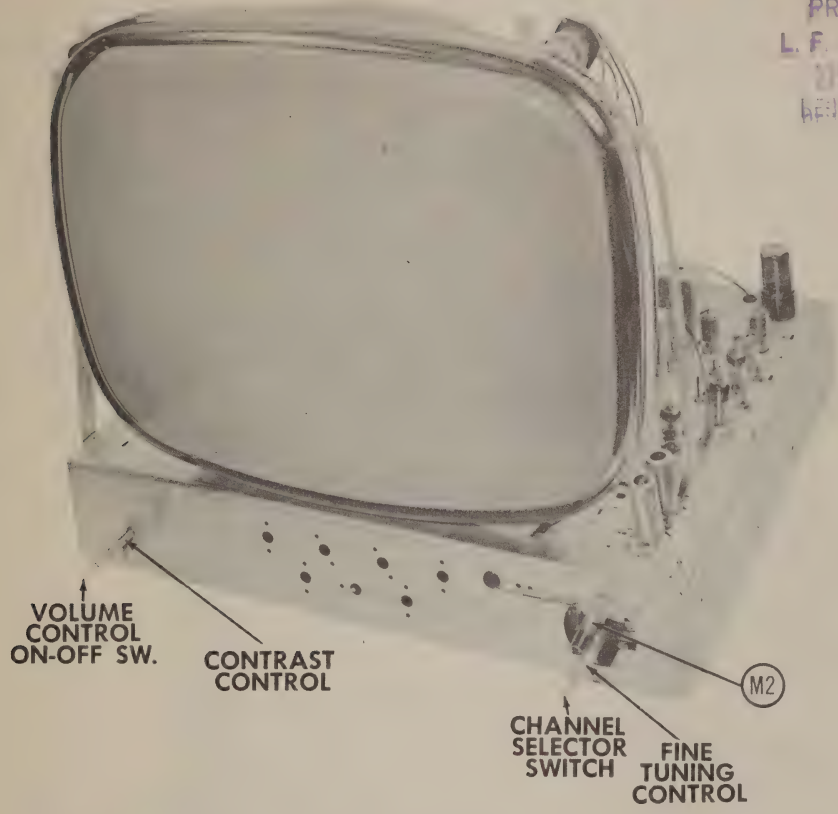

KAYE-HALBERT MODEL 012 (Ch. 243)

TRADE NAME	Kaye Halbert Model 012 (Ch.243)
MANUFACTURER	Kaye-Halbert Corp., 3555 Hayden Ave., Culver City, Calif.
TYPE SET	Television Receiver
TUBES	Twenty-Four
POWER SUPPLY	110-120 Volts AC - 60 Cycle — RATING 1.85 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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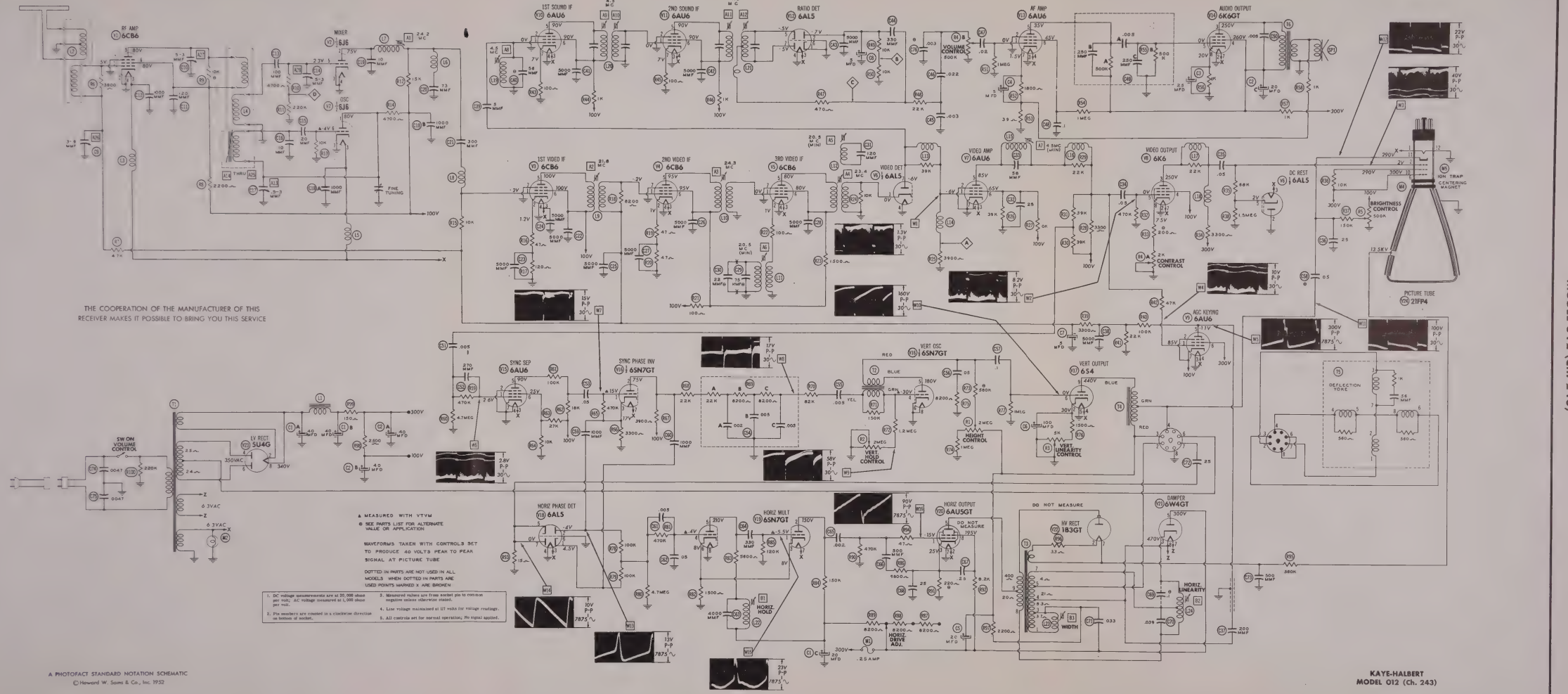
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
RF AMP V1 6CB6
MIXER V2 6J6
OSC V2 6J6
1ST SOUND IF V10 6AU6
2ND SOUND IF V11 6AU6
RATIO DET V12 6AL5
AF AMP V13 6AU6
AUDIO OUTPUT V14 6K6GT
1ST VIDEO IF V3 6CB6
2ND VIDEO IF V4 6CB6
3RD VIDEO IF V5 6CB6
VIDEO DET V6 6AL5
VIDEO AMP V7 6AU6
VIDEO OUTPUT V8 6K6
DC REST V9 6AL5
AGC KEYING V5 6AU6
SYNC SEP V15 6AU6
SYNC PHASE INV V16 6SN7GT
VERT OSC V18 6SN7GT
VERT OUTPUT V17 6S4
HORIZ PHASE DET V18 6AL5
HORIZ MULT V19 6SN7GT
HORIZ OUTPUT V20 6AU5GT
DAMPER V21 6W4GT
LV RECT V23 5U4G
HV RECT V22 1B3GT
PICTURE TUBE V24 21FP4
VOLUME CONTROL 600K
BRIGHTNESS CONTROL 500K
CONTRAST CONTROL 2M
HEIGHT CONTROL 1MEG
VERT LINEARITY CONTROL 5K
VERT HOLD CONTROL 2MEG
HORIZ HOLD
HORIZ DRIVE ADJ. 8200
HORIZ LINEARITY
WIDTH
ION TRAP CENTERING MAGNET
DEFLECTION YOKE
SW ON VOLUME CONTROL
FINE TUNING
DO NOT MEASURE
A MEASURED WITH VTVM
B SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 40 VOLTS PEAK TO PEAK SIGNAL AT PICTURE TUBE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
1. DC voltage measurements are at 20,000 ohms per volt; AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; No signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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KAYE-HALBERT
MODEL 012 (Ch. 243)

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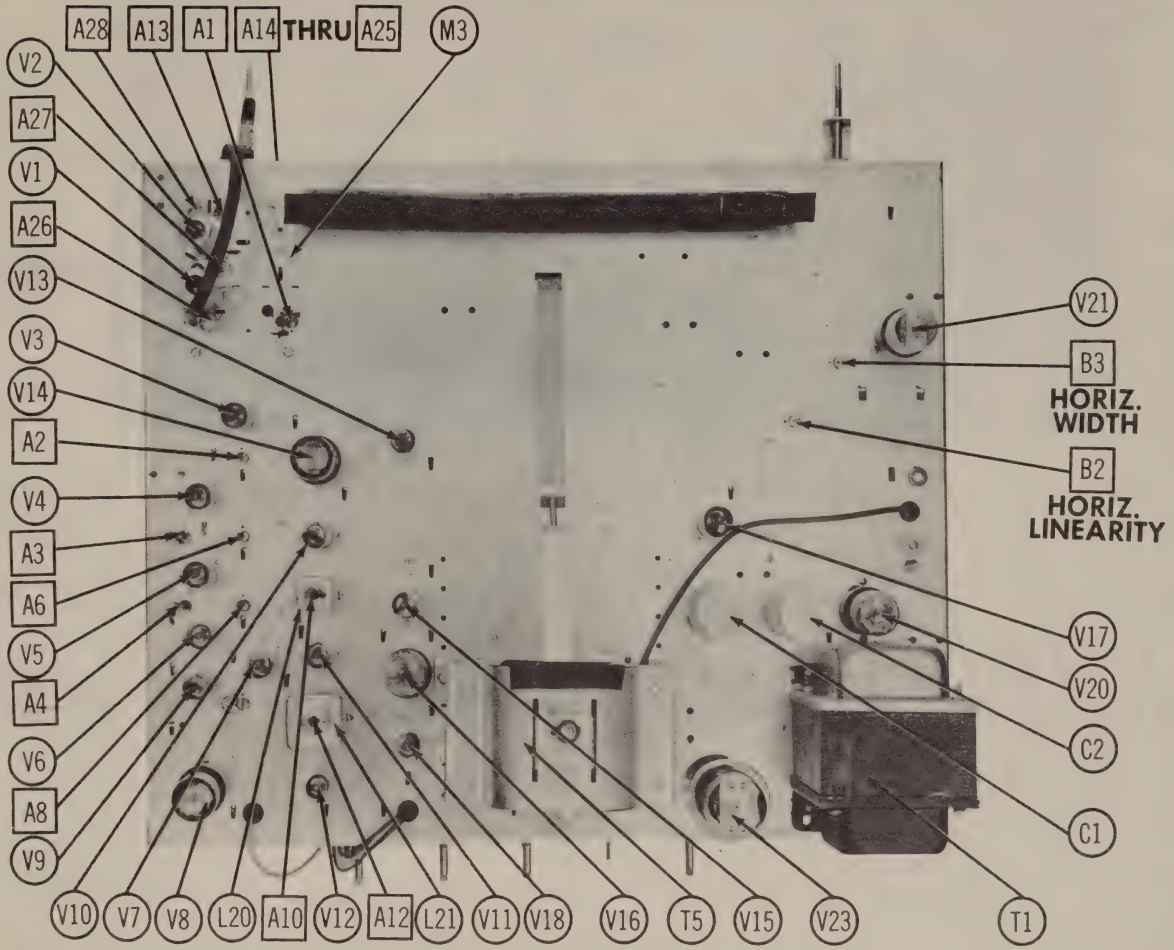
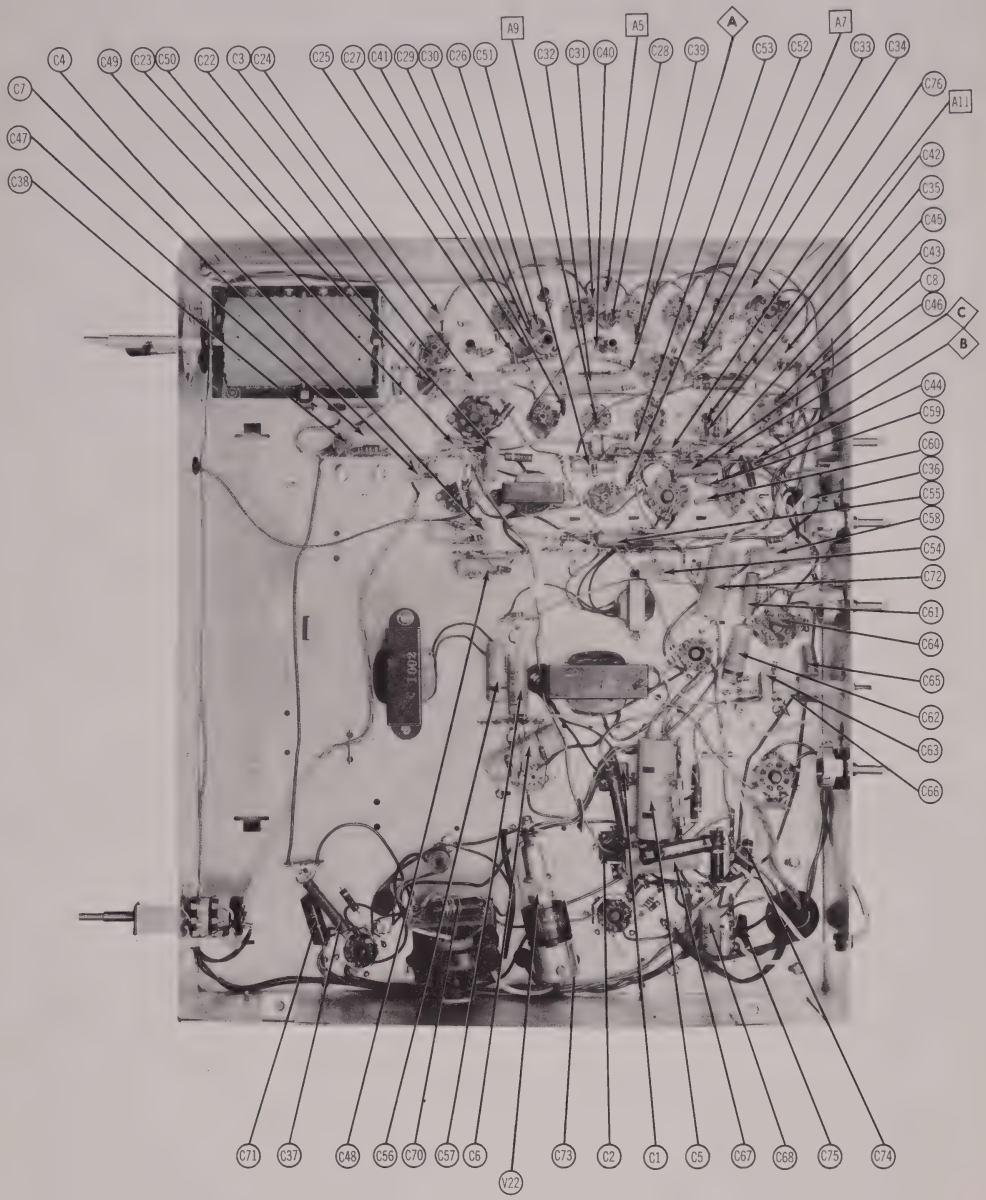
MODEL 012 (Ch. 243)



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
COLORADO

TOP VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal multibrator tube, V19, from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube, V2, from its socket and replace with a 6J6 which has pin 1 removed, thus disabling the local oscillator and reducing the possibility of erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24.2MC (Unmod.)	Any	DC probe to point (A) Common to chassis	A1	Adjust for maximum deflection.
2.	"	"	21.8MC	"	"	A2	"
3.	"	"	24.3MC	"	"	A3	"
4.	"	"	23.4MC	"	"	A4	"
5.	"	"	20.5MC	"	"	A5, A6	Detune A6 by touching windings with finger while adjusting A5 for MINIMUM deflection. Adjust A6 for MINIMUM deflection detuning A5 with finger if necessary.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24MC (10MC Swp)	20.5MC 21.4MC 25MC	Any	Vert. Amp. input to point (A). Low side to chassis.		Check for response curve similar to fig. 1 If necessary retouch A1 through A4 for proper response. If A4 is changed recheck trap A5. In extreme fringe areas greater gain may be obtained by aligning the IF's so the 25MC marker appears at the top of the curve. Adjacent channel traps are available if needed. It is possible to tune A5 to 26.5MC to use it as an adjacent sound trap.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD	High side to point (A) Low side to chassis.	Not used	4.5MC (400~ Mod.)	Any	Vert. amp. to pin 2 of picture tube. Low side to chassis.	A7	Adjust for MINIMUM 400~ indication on scope.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.001MFD	High side to point (A). Low side to chassis.	4.5MC	Any	DC probe to point (B) Common to chassis.	A8, A9, A10, A11	Adjust for maximum deflection.
9.	"	"	"	"	DC probe to point (C). Common to point (B)	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60~ modulation and 450 KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.001MFD	High side to point (A) Low side to chassis.	4.5MC (450 KC Swp)	4.5MC	Any	Vert. Amp. to point (B). Low side to chassis.	A8, A9, A10, A11	Disconnect stabilizer capacitor C8. Adjust for maximum amplitude and symmetry as per fig. 2.
9.	"	"	"	"	"	Vert. amp. to point (C). Low side to chassis.	A12	Reconnect capacitor C8. Adjust A12 so 4.5-MC occurs at center of crossover lines as per fig. 3. SLIGHTLY retouch A11 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be required.
If the oscillator seems to be of frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A13. If adjustment of A13 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. amp. to point (A) Low Side to Chassis.	A14	Adjust to place sound marker as shown in fig. 4. The video marker should be at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A15	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A16	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A17	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A18	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A19	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A20	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A21	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A22	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A23	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A24	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A25	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10 MC Swp)	205.25MC 209.75MC	12	Vert. amp. thru 10KΩ to point (D). Low side to chassis.	A26, A27 A28	Adjust for response curve similar to fig. 5 with markers above 90%.
12.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	'		Check for response curve similar to fig. 5. If markers fall below 70% on any channel, make slight adjustments of A26, A27 and A28 with channel selector set for that channel. Recheck all channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75 MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75 MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

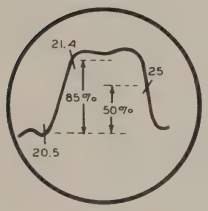


FIG.1

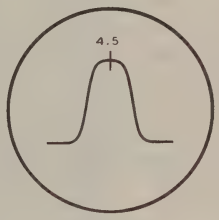


FIG. 2

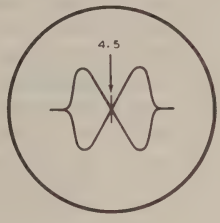


FIG. 3

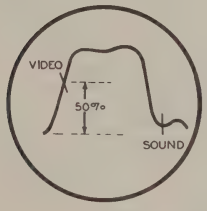


FIG.4

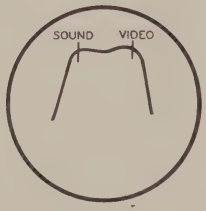
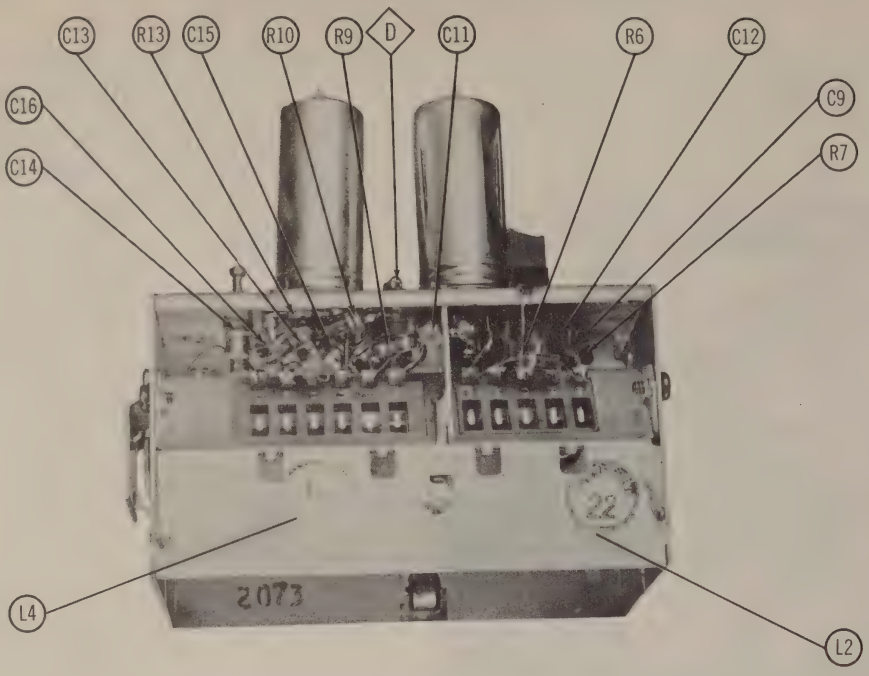


FIG.5

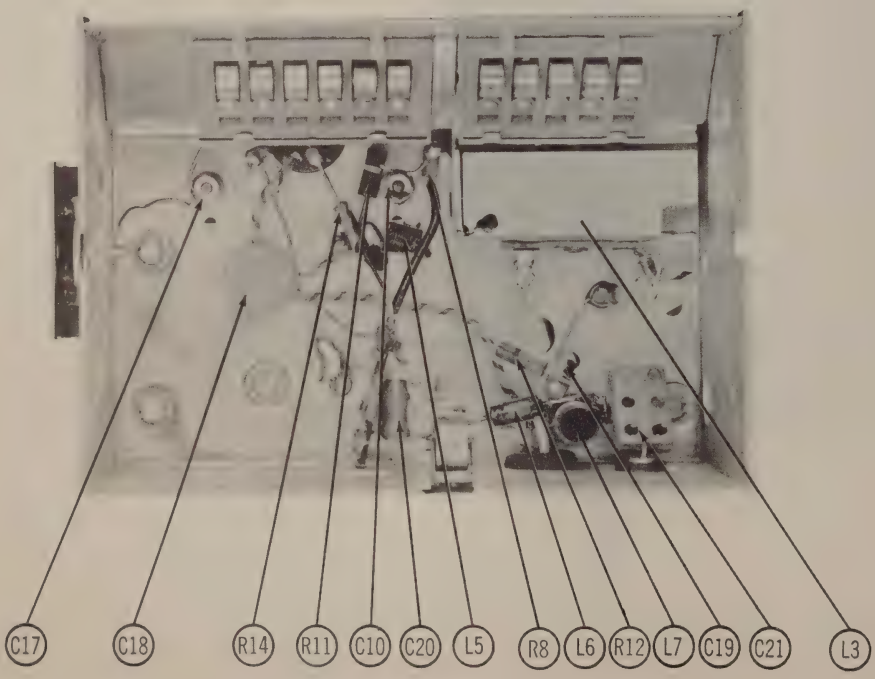
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	72KΩ	0Ω	.1Ω	0Ω	†4.9KΩ	†4.9KΩ	0Ω		
V 2	6J6	†7.4KΩ	†17KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	35KΩ	167Ω	.1Ω	0Ω	†2.7KΩ	†2.7KΩ	0Ω		
V 4	6CB6	25KΩ	94Ω	.1Ω	0Ω	†2.8KΩ	†2.8KΩ	0Ω		
V 5	6CB6	.2Ω	100Ω	.1Ω	0Ω	†4.3KΩ	†4.3KΩ	0Ω		
V 6	6AL5	.2Ω	0Ω	.1Ω	0Ω	1.5Meg	INF	3.9KΩ		
V 7	6AU6	3.9KΩ	0Ω	.1Ω	0Ω	†5.8KΩ	18KΩ	0Ω		
V 8	6K6GT	INF	0Ω	†3.5KΩ	†2.7KΩ	470KΩ	475Ω	.1Ω	475Ω	
V 9	6AU6	†50KΩ	†2.7KΩ	0Ω	.1Ω	120KΩ	†190Ω	†2.7KΩ		
V 10	6AU6	1Ω	0Ω	.1Ω	0Ω	†3.7KΩ	†3.7KΩ	100Ω		
V 11	6AU6	1.8Ω	0Ω	0Ω	.1Ω	†3.7KΩ	†3.7KΩ	100Ω		
V 12	6AL5	0Ω	20KΩ	.1Ω	0Ω	INF	0Ω	INF		
V 13	6AU6	1Meg	0Ω	0Ω	.1Ω	†500KΩ	†1Meg	1.8KΩ		
V 14	6K6GT	0Ω	0Ω	†1.8KΩ	†1.2KΩ	500KΩ	INF	.1Ω	1KΩ	
V 15	6AU6	5.1Meg	0Ω	.1Ω	0Ω	†110KΩ	8KΩ	0Ω		
V 16	6SN7GTA	470KΩ	†6.6KΩ	3.3KΩ	2.5Meg	#1.1Meg	0Ω	.1Ω	0Ω	
V 17	6S4	INF	3.6KΩ	1Meg	.1Ω	0Ω	1Meg	INF	INF	#3.9KΩ
V 18	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	15Ω	0Ω	15Ω		
V 19	6SN7GTA	120KΩ	†160KΩ	1.5KΩ	5.1Meg	†15KΩ	1.5KΩ	.1Ω	0Ω	
V 20	6AU5GT	470KΩ	.1Ω	220Ω	INF	#26Ω	INF	0Ω	†8.4KΩ	
V 21	6W4GT	#2.2KΩ	INF	160KΩ	INF	†190Ω	INF	#26Ω	#26Ω	
V 22	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP #426Ω
V 23	5U4G	INF	20KΩ	INF	25Ω	INF	24Ω	INF	20KΩ	
V 24	21FP4	.1Ω	1.6Meg	PIN 6 †190Ω	PIN 10 †10KΩ	PIN 11 220KΩ	PIN 12 0Ω			

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM PIN 2 OF V23
# MEASURED FROM PIN 3 OF V21

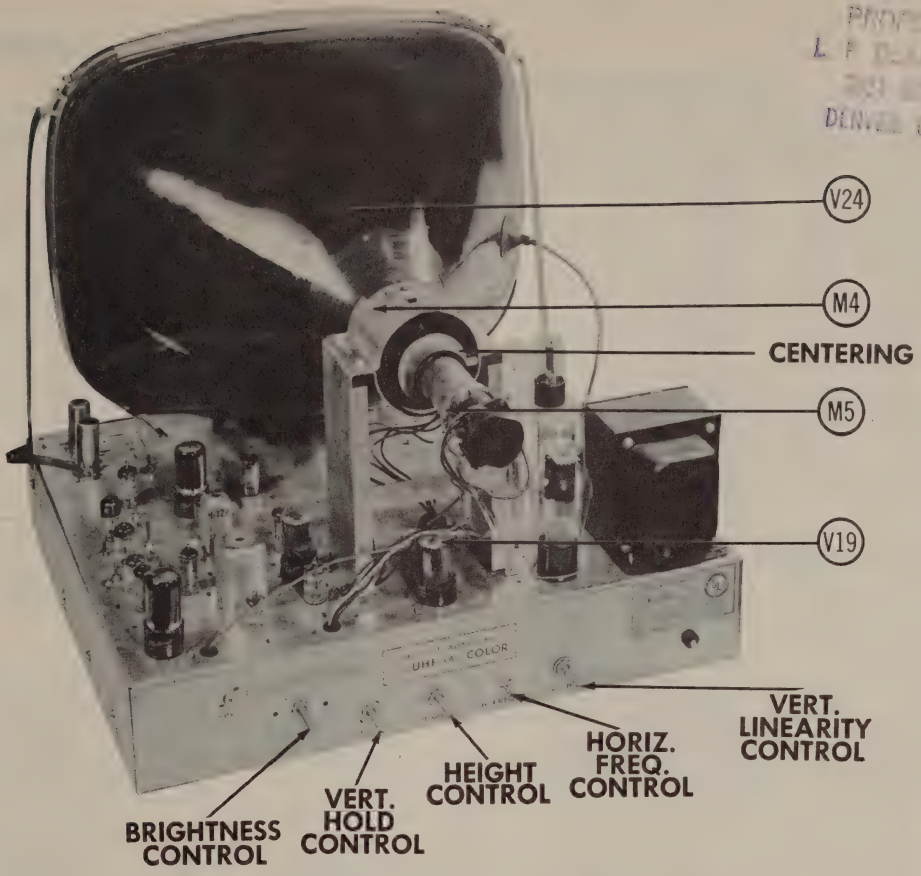


RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

PROPERTY OF
L. F. DAMBACH
303 ACOMA ST.
DENVER COLORADO



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV Station, preferably a test pattern.

Adjust the horizontal hold slug (B1) until picture synchronizes horizontally.

Adjust the width slug (B3) until the picture fills the mask horizontally.

Adjust the horizontal linearity slug (B2) until picture is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type Control Knobs from front panel.
2. Remove 2 wood crews. Remove Antenna Bracket from back cover.
3. Remove 9 wood screws. Remove back cover.
4. Disconnect Speaker leads.
5. Remove 4 Chassis Bolts. Remove Chassis.

NOTE.
For Picture Tube Removal it is necessary to remove Chassis as outlined above.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Kaye-Halbert PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier		6CB6	7CH	
V1B	RF Amplifier		6AG5	7BD	
V2	Converter		6J6	7BF	
V3	1st. Video IF Amp.		6CB6	7CH	
V4	2nd. Video IF Amp.		6CB6	7CH	
V5	3rd. Video IF Amp.		6CB6	7CH	
V6	Video Detector		6AL5	6BT	
	DC Restorer		6AL5	6BT	
V7	Video Amplifier		6AU6	7BK	
V8	Video Output		6K6GT	7S	
V9	Keyed AGC		6AL5	7BK	
V10	1st. Sound IF Amp.		6AU6	7BK	
V11	2nd. Sound IF Amp.		6AU6	7BK	
V12	Ratio Detector		6AL5	6BT	
V13	A.F Amplifier		6AU6	7BK	
V14	Audio Output		6K6GT	7S	
V15	Sync. Separator		6AU6	7BK	
V16	Vert. Oscillator Sync. Phase Inv.		6SN7GTA	8BD	
V17	Vert. Output		6S4	6AC	
V18	Horiz. Phase Det.		6AL5	6BT	
V19	Horiz. Mult.		6SN7GTA	8BD	
V20	Horiz. Output		6AU5	6CK	
V21	Damper		6W4GT	4CG	
V22	HV Rectifier		1B3GT	3C	
V23	LV Rectifier		5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Kaye-Halbert PART No.	REPLACEMENT DATA: SYLVANIA PART No.	RTMA BASE TYPE	NOTES
V24	21FP4	21FP4	12C	
		21FP4A	12C	Add outer coating grounding spring

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Kaye-Halbert PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	400	B6530	AFH4-79		UPT44145-V2		R1080	▲ Filter ■ Filter ● Horiz. MV Dec.
B	40	400							■ Decoupling
C	30	600							● Decoupling
C2A	40	400	B6530	AFH4-79		UPT44145-V2		R1080	■ Decoupling ● Decoupling ▲ Audio Output Dec.
B	40	400							
C	20	400							
C3	25	50	BS150	PRS50/25		BR155A		TVA-1308	Audio Output Cathode
C4	5	50	BS230	PRS50/4		BR150		TVA-1306	A.F Amp. Cathode
C5	20	250	BS140	PRS450/20		BR2035A		TVA-1608	Vert. Output Dec.
C6	100	50	BS180	PRS50/100		BR1501		TVA-1310	Vert. Output Cathode
C7	5	50	BS230	PRS50/4		BR150		TVA-1306	AGC Filter
C8	5	50	BS130	PRS50/4		BR150		TVA-1303	Stabilizing Cap.
C9	3-8				S29-10				Variable Trimmer
C10	.5-3				S29-3				Variable Trimmer
C11	130		SI130	D6-131		TMS7I2	GP2K-131	5GA-T12	RF Amp. Dec.
C12	1000		SI000	D6-102		TMS2A	GP2L-102	5HK-D1	RF Amp. Fil.
C13	100		SI100	D6-101		TMS7I	GP1K-101	5GA-T1	RF Coupling
C14	3-3			S29-3					Variable Trimmer
C15	20		SI20MP0	TCZ-20			M90K-200		Osc. Grid Cap.
C16	10		SI10NT50	TCH-10			M750K-100	5TCU-Q8	Fixed Trimmer
C17	3-8			S29-3					Variable Trimmer
C18A	1000		1469-2X001	DD-2-102		TMSDD1	SI3-001	5HK-2D1	Conv. Fil. Bypass
B	1000								RF Bypass
C19	10		SI10NP0	TCZ-10			M90K-100	5TCC-Q8	Fixed Trimmer
C20	75	500	1469-0000T5						Fixed Trimmer
C21	300		SI300	D6-301			GP2K-301		IF Coupling
C22	5000		B455	BPD-005	DD-502	TMSD5	SI1-005	5HK-D5	1st. Video IF Dec.
C23	5000		B455	BPD-005	DD-502	TMSD5	SI1-005	5HK-D5	1st. Video IF Cathode
C24	5000		B455	BPD-005	DD-502	TMSD5	SI1-005	5HK-D5	1st. Video IF Fil.
C25	5000		B455	BPD-005	DD-502	TMSD5	SI1-005	5HK-D5	AGC Filter
C26	5000		B455	BPD-005	DD-502	TMSD5	SI1-005	5HK-D5	2nd. Video IF Dec.
C27	5000		B455	BPD-005	DD-502	TMSD5	SI1-005	5HK-D5	2nd. Video IF Cathode
C28	5000		B455	BPD-005	DD-502	TMSD5	SI1-005	5HK-D5	3rd. Video IF Dec.
C29	75			SI75NP0	TCZ-75		M90-333-750		Fixed Trimmer ¶
C30	22			SI22	D6-220		GP1K-220	5GA-Q22	Fixed Trimmer *
C31	120				TCH-130		N750L-121		Fixed Trimmer
C32	25	300	B6280		P488-25		PT2P25		2TM-P25 Video Amp. Screen
C33	56		B197		BI56	D6-560		GP1K-560	Fixed Trimmer
C34	.05	600	B4280		P688-05	DF-503	PTE5S5		5TM-S5 Video Coupling
C35	.05	600	B4280		P688-05	DF-503	PTE5S5		5TM-S5 Video Coupling
C36	25	200	B2080		P488-25		PT2P25		2TM-P25 Picture Tube Cathode
C37	2500	2500	B4640						Horiz. Feedback
C38	5000		B455		BPD-005	DD-502	TMSD5	SI1-005	5HK-D5 AGC Filter
C39	5		B145		SI5NP0	TCS-4.7		NP0E-050	Sound IF Coupling
C40	56		B197		SI56	D6-560		GP1K-560	Fixed Trimmer ¶
C41	5000		B455		BPD-005	DD-502	TMSD5	SI1-005	5HK-D5 1st. Sound IF Dec.
C42	5000		B455		BPD-005	DD-502	TMSD5	SI1-005	5HK-D5 2nd. Sound IF Dec.
C43	5000		B456		BPD-005	DD-502	TMSD5	SI1-005	5HK-D5 RF Bypass
C44	330				S330	D6-331		GP1K-331	5GA-T33 Diode Load Cap.
C45	.003	200	B2180		P488-003	D6-302	PTE6D3	GP2-333-302	5TM-D3 De-Emphasis
C46	.022	400	B2340		P488-022	DF-303	PTE5S3		4TM-S22 Audio Coupling
C47	.02	400	B2340		P488-02	DF-203	PTE4S3		4TM-S2 Audio Coupling
C48	.1	400	B2540		P488-1	DF-104	PTE4P1		4TM-P1 AF Amp. Screen Bypass
C48A	.005								Audio Coupling
B	250		†K-230		†PC-70				A.F Amp. Plate Bypass
C									Audio Output Grid .

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Kaye-Halbert PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C50	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Output Plate
C51	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Sync. Coupling
C52	270		B239	SI270	D6-271		GP2K-271	5GA-T27	Sync. Coupling
C53	.05	600	B4280	P688-05	DF-503	PTE6S5		6TM-S5	Sync. Coupling
C54A	.002			P688-002		PTE6D2	GP2-333-202		Vert. Integrator Net.
B	.005		●K-220	●PC-100		PTE6D5	GP2-333-502	¶ 6(01C)	Vert. Integrator Net.
C	.005			P688-005		PTE6D5	GP2-333-502		Vert. Integrator Net.
C55	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Vert. Osc. Grid Cap.
C56	.05	600	B4280	P688-05	DF-503	PTE6S5		6TM-S5	Vert. Discharge
C57	.1	600	B2540	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C58	.05	600	B4280	P688-05	DF-503	PTE6S5		6TM-S5	Vert. Sweep Coupling††
C59	1000		B270	SI1000	D6-102	TMSD1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C60	1000		B270	SI1000	D6-102	TMSD1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C61	.005	600	B2200	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Horiz. AFC Filter
C62	.05	600	B4280	P688-05	DF-503	PTE6S5		6TM-S5	Horiz. AFC Filter
C63	4000	500	BI712	1464-004		1DRSD4			Fixed Trimmer
C64	330	500	BI190	1469-00035					Horiz. MV Feedback
C65	.002	600		P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Horiz. Sweep Coupling
C66	500	500	BI287	1469-0005		5RST5		MS-35	Horiz. Discharge
C67	.25	600	B2620	684-25		PTE6P25		6TM-P25	Horiz. Output Screen
C68	.25	200	B2650	P488-25		PJ2P25		2TM-P25	Horiz. Output Cathode
C69	.1	600	B2560	P688-1		PTE6P1		6TM-P1	Damper Filter *
C70	.039	600		P688-04		PTE6S5		6TM-S4	Da mper Filter
C71	.033	600	B2960	P688-033		PTE6S3		6TM-S3	Horiz. Feedback
C72	.25	600	B2620	684-25		PTE6P25		6TM-P25	Horiz. Sweep Coupling
C73	500	20000	BI810	HV20C	TV3-502	MM-C20T5			HV Filter
C74	.0047	600				PJ6D5		6TM-D47	Line Filter
C75	.0047	600				PJ6D5		6TM-D47	Line Filter
C76	.003	600		P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Tone Comp. *

* Not used in all models
† Some models use 10MMF in this application
¶ Some models use 47MMF in this application
†† Some models use 068MFD in this application (Part #B2600)
‡ Items C49A, C49B, C49C, R55A, R55B are combined in one unit.
When replacing items separately C49B and C49C should total 250MMF
● Items C54A, C54B, C54C, R69A, R69B, R69C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Kaye-Halbert PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2Meg	½	M-106-A	Q11-139	AM-83-S	AN-75	Height Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R1A per instructions
R2A	2Meg	½	M-106-A	Q11-139	AM-83-S	AN-75	Vert. Hold Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R2A per instructions
R3A	500KΩ	½	M-10	Q11-14	AM-19-S	AN-10	Vert. Linearity Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-1	Attach to R3A per instructions
				"Concentrikit"			
R4A	2000Ω	½	M-116	B11-113*	RTV-293	SBB-837-S	Contrast Control-Panel
B	500KΩ	½		B13-133 *			Volume Control-Rear
C	Shaft		Not Req.	E187*			Attach per instructions in "Concentrikit"
D	Switch		Not Req.	76-1*			Attach per instructions in "Concentrikit"
R5A	500KΩ	½	M-120	Q11-143	AM-58-S	AN-59	Brightness Control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-1	Attach to R5A per instructions

* Additional parts to be used with "Concentrikit"

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Kaye Halbert PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE NOTED
R6	3900Ω	½		BTS-3900	Antenna Coil Shunt
R7	47KΩ	½		BTS-47K	RF Amp. Grid
R8	2200Ω	20% ½		BTS-2200	RF Amp. Decoupling
R9	10KΩ	½			RF Coil Shunt - See Note 1
R10	4700Ω	½		BTS-4700	Mixer Grid
R11	220KΩ	20% ½			Mixer Grid
R12	15KΩ	20% ½			Mixer Plate
R13	10KΩ	½			Osc. Grid
R14	4700Ω	½		BTS-4700	Osc. Plate
R15	10KΩ	½	A755		1st. Video IF Amp. Grid
R16	47Ω	½	A335		1st. Video IF Amp. Cathode
R17	120Ω	½	A410	BTS-120	1st. Video IF Amp. Cathode
R18	4200Ω	½	A740		2nd. Video IF Coil Shunt
R19	47Ω	½	A335		2nd. Video IF Amp. Cathode
R20	47Ω	½	A335		2nd. Video IF Amp. Cathode
R21	100Ω	20% ½	A395	BTS-100	Decoupling
R22	100Ω	½	A395	BTS-100	3rd. Video IF Amp. Cathode
R23	1500Ω	½	A605	BTS-1500	3rd. Video IF Amp. Decoupling
R24	10KΩ	½	A755		4th. Video IF Coil Shunt
R25	3900Ω	½	A680	BTS-3900	Video Det. Diode Load
R26	39KΩ	½	A890	BTS-39K	Video Divider
R27	10KΩ	½	A755	BTS-10K	Video Amp. Screen
R28	3300Ω	½	A665	BTS-3300	Video Amp. Plate
R29	22KΩ	½	A815	BTS-22K	Video Peakong Coil Shunt
R30	39KΩ	½	A860	BTS-39K	Voltage Divider
R31	39KΩ	½	A890	BTS-39K	Voltage Divider
R32	470KΩ	½	A1055	BTS-470K	Video Output Grid
R33	200Ω	½			Video Output Cathode See Note 2
R34	3300Ω	2	A4665	BTB-3300	Video Output Plate
R35	68KΩ	½	A905	BTS-68K	Picture Tube Grid
R36	10KΩ	½	A755	BTS-10K	ACC Anode Load
R37	150KΩ	½	A965	BTS-150K	Picture Tube Cathode
R38	1.5Meg	½	A1145	BTS-1.5Meg	DC Restorer Diode Load
R39	3300Ω	½	A665	BTS-3300	AGC Network
R40	100KΩ	½	A935	BTS-100K	AGC Network
R41	22KΩ	½	A815	BTS-22K	AGC Network
R42	47KΩ	½	A875	BTS-47K	Keyed AGC Grid
R43	100Ω	½	A395	BTS-100	1st. Sound IF Amp. Cathode

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Kaye-Halbert PART No.	IRC PART No.	IDENTIFICATION CODES
R44	1000Ω	½	A575	BTS-1000	1st. Sound IF Amp. Decoupling
R45	100Ω	½	A395	BTS-100	2nd. Sound IF Amp. Cathode
R46	1000Ω	½	A575	BTS-1000	2nd. Sound IF Amp. Decoupling
R47	470Ω	½		BTS-470	Balancing
R48	22KΩ	½	A815	BTS-22K	De-emphasis
R49	10KΩ	½	A755	BTS-10K	Ratio Det. Diode Load
R50	10KΩ	½	A755	BTS-10K	Ratio Det. Diode Load
R51	1Meg	½	A1115	BTS-1Meg	AF Amp. Grid
R52	1800Ω	½	A620	BTS-1800	AF Amp. Cathode
R53	39Ω	½	A320		AF Amp. Cathode
R54	1Meg	½	A1115	BTS-1Meg	AF Amp. Screen
R55A	500K	½	† K230		AF Amp. Plate
B	500K	½			Output Grid
R56	1000Ω	½	A2575	BTA-1000	Output Cathode
R57	1000Ω	½	A2575	BTA-1000	Output Decoupling
R58	1000Ω	½	A575	BTS-1000	Feedback Network
R59	470KΩ	½	A1055	BTS-470K	Isolation
R60	4.7Meg	½	A1235	BTS-4.7Meg	Sync. Seperator Grid
R61	100KΩ	½	A935	BTS-100K	Sync. Seperator Plate
R62	18KΩ	½	A800	BTS-18K	Sync. Seperator Plate
R63	27KΩ	½	A820	BTS-27K	Sync. Sep. Screen Screen
R64	10KΩ	½	A755	BTS-10K	Voltage Divider
R65	470KΩ	½	A1055	BTS-470K	Sync. Phase Inv. Grid
R66	3300Ω	5% ½	A665	BTA-3300 5%	Sync. Phase Inv. Cathode
R67	3900Ω	5% ½	A680	BTS-3900 5%	Sync. Phase Inv. Plate
R68	22KΩ	½	A815	BTS-22K	Integrator Network
R69A	27KΩ	½		BTS-27K	Integrator Network
B	8200Ω	½	● K220	BTS-8200	Integrator Network
C	8200Ω	½		BTS-8200	Integrator Network
R70	82KΩ	½		BTS-82K	Integrator Network
R71	150KΩ	½	A965	BTS-150K	Vert.Osc. Transformer Shunt
R72	1.2Meg	½	A1130	BTS-1.2Meg	Vert. Osc. Grid
R73	560KΩ	½		BTS-560K	Vert.Osc. Plate - See Note 3
R74	1Meg	½	A1115	BTS-1Meg	Voltage Divider
R75	8200Ω	½	A740	BTS-8200	Vert. Peaking
R76	1500Ω	½	A605	BTS-1500	Vert. Out put Cathode
R77	1Meg	½	A1115	BTS-1Meg	Vert.Output Grid
R78	100KΩ	5% ½	A935	BTS-100K 5%	Horiz. Phase Det. Diode Load
R79	100KΩ	5% ½	A935	BTS-100K 5%	Horiz. Phase Det. Diode Load
R80	4.7Meg	½	A1235	BTS-4.7Meg	Horiz. Phase Det. Diode Load
R81	470KΩ	½	A1055	BTS-470K	Horiz. AFC Filter
R82	1500Ω	½	A605	BTS-1500	Horiz. MV Cathode
R83	5600Ω	½	A710	BTS-5600	Horiz. MV Plate
R84	150KΩ	½	A965	BTS-150K	Horiz. MV Plate
R85	120KΩ	5% ½	A945	BTS-120K 5%	Horiz. MV Grid
R86	8800Ω	½	A725	BTS-8800	Horiz. Peaking
R87	8200Ω	20% ½		BTA-8200	Horiz. Drive Network
R88	8200Ω	20% ½		BTA-8200	Horiz. Drive Network
R89	8200Ω	20% ½		BTA-8200	Horiz. Drive Network
R90	470KΩ	½	A1055	BTS-470K	Horiz. Output Grid
R91	220Ω	2	A4455	BW-2-220	Horiz. Output Cathode - See Note 4
R92	8200Ω	2		BTB-8200	Horiz. Output Screen
R93	15Ω	½	A245		Horiz. Feedback
R94	47Ω	½	A335		Parasitic Suppressor
R95	560KΩ	½	A760		HV Filter
R96	3.3Ω	½	A150		HV Rectifier Filament - Wire Wound
R97	2200Ω	1	A2635	BTA-2200	Decoupling
R98	2500Ω	20	A2285	ZD-2500	Voltage Divider - Wire Wound
R99	150Ω	10	1 3/4A-150		Filter - Wire Wound
R100	220KΩ	½	A995	BTS-220K	Line Isolation

† Items R55A, R55B, C49A, C49B, C49C are combined in one unit
● Items R69A, R69B, R69C, C54A, C54B, C54C are combined in one unit
Note 1. Some Models use a 9100 Ω Resistor in this application
Note 2. Some Models use a 330Ω Resistor in this application
Note 3. Some Models use a 470KΩ Resistor in this application
Note 4. Some models use a 180Ω Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Kaye-Halbert PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ② 2A	700VCT 230ADC	5VAC ③ 3A	6.3VAC ① 1.2A SEC. 4 6.3VAC ① 8.2A	C102	P-8170	P-3169 ①	TP-392 ①

① Drill new mtg. holes

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: Kaye-Halbert PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	250Ω	1.4KΩ	C2102	A-8125	A-3000 ②	TB0-1 ③	Vertical Osc. Trans.
T3	420Ω	370 Tap @ 3.7Ω, 22Ω, 33Ω SEC. 2 0Ω	C2121				Horiz. Output Trans.
T4	1700Ω		C2306	A8141	A-5039		Vert. Output Trans.
T5A	10Ω		H6606	DY-9	MDF-70		Horiz. Deflection Coils
T5B	46Ω		H6606				Vert. Deflection Coils

② Drill one new mtg. hole
③ Mount on Chassis

KAYE-HALBERT MODEL 012 (Ch. 243)

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		Kaye-Halbert	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T6	5.2KΩ	3.4Ω	590Ω	.8Ω	C-2002	A-3877	A-2930	RO-9 ④	④ Drill one new mtg. hole

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	Kaye-Halbert PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.230A	40Ω	1.5Hy	C1002	C-2326 ①	C-2991 ①	TR-3300①	① Drill one new mtg. hole

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	Kaye-Halbert PART No.	MERIT PART No.	
L2	Ant. Coils	0Ω	0Ω			
L3	Fil. Choke	0Ω				
L4	RF, Mixer Grid & Osc. Coils	0Ω				
L5	Fil. Choke	0Ω				
L6	RF Choke	.3Ω				
L7	1st. Video IF	.3Ω				
L8	Coupling Coil	.8Ω				
L9	2nd. Video IF	.2Ω	.2Ω	H112		
L10	3rd. Video IF	.2Ω	.2Ω	H112		
L11	Sound Trap	0Ω	0Ω	H6100	TV-150	
L12	4th. Video IF	.2Ω	.2Ω	H122		Includes Trap
L13	Peaking Coil	9Ω		H2108	TV-183	Wound on 39K resistor, 180 Microhenries
L14	Peaking Coil	10.5Ω		H2116	TV-185	250 microhenries
L15	4.5MC Trap	1.2Ω		H6102	TV-151	
L16	Peaking Coil	10.5Ω		H2116	TV-185	250 microhenries
L17	Peaking Coil	6.8Ω		H2112	TV-182	Wound on 22KΩ resistor, 120 microhenries
L18	Peaking Coil	6Ω		H2110	TV-181	93 microhenries
L19	1st. Sound IF	1Ω		H116	TV-151	
L20	2nd. Sound IF	3Ω	1.8Ω	H128		
L21	Ratio Det.	4.4Ω	.2Ω	H110	TV-110	Tap ② 1Ω
L22	Horiz. Osc.	90Ω		H5104	TV-163	
L23	Width Coil	9Ω				
L24	Horiz. Lin.	5.8Ω		H4104		Tap ② 1.7Ω

FUSES

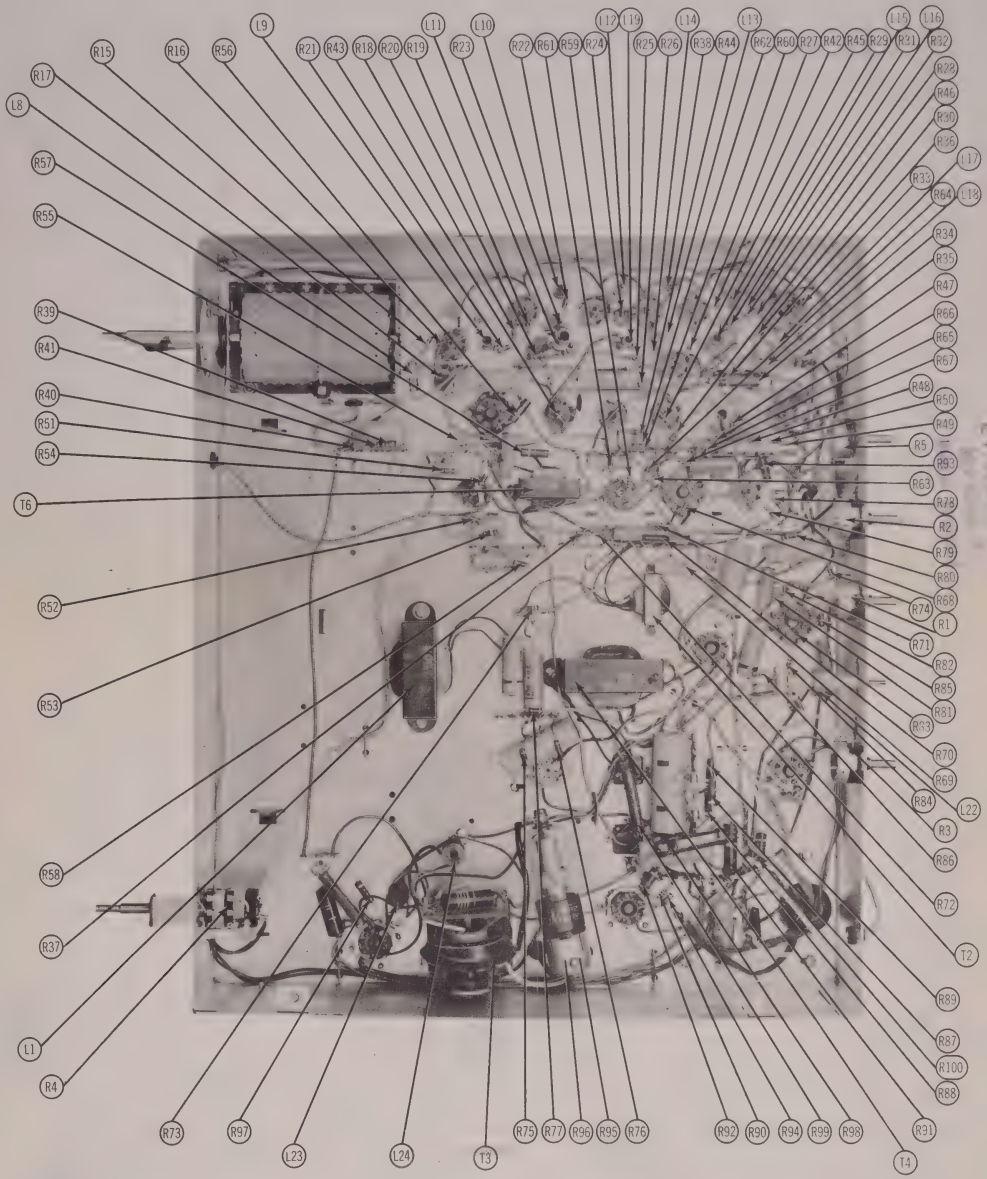
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Kaye-Halbert PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG Pigtail Slo-Blo	1/4 A. 125 V.	A-8120		315.250		MDV 1/4	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					Kaye-Halbert PART No.		
M2	Bayonet	6-8	.25	Blue			Type #44

MISCELLANEOUS

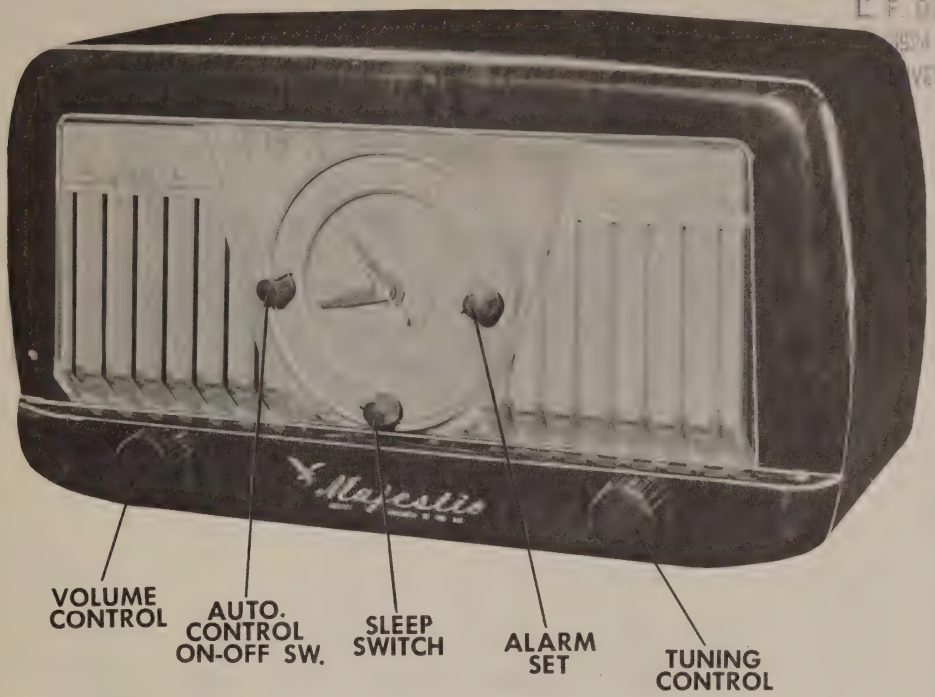
ITEM No.	PART NAME	Kaye-Halbert PART No.	NOTES
M3	RF Tuner	K510	
M4	Centering Magnet	Y230	
M5	Ion Trap		



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

L. F. BLANKENSHIP
[illegible] GRAND AVE.
[illegible]VER, COLORADO

MAJESTIC
MODELS 5C-2, 5C-3



MAJESTIC
MODELS 5C-2, 5C-3

MAJESTIC MODEL 5C-2

TRADE NAME	Majestic Models 5C-2, 5C-3
MANUFACTURER	Majestic Radio & Tel., Div. of Wilcox-Gay Corp., 70 Washington St., Brooklyn, N.Y.
TYPE SET	AC Operated AM Superheterodyne Receiver with Electric Clock
TUBES (FIVE)	Types 12BE6 Conv., 12BA6 IF Amp., 12AT6 or 12AV6 Det.-AVC-AF Amp., 50C5 Audio Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC-60 Cycle — RATING .270 Amp. @ 117 Volts AC
TUNING RANGE	BROADCAST 540-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To check pointer setting turn tuning gang fully closed. Pointer should be in position directly over the small dash above 55 on the dial scale.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and chassis.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to stator lug on rear section of tuning gang. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.		Loop	1650KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1500KC	Tune to 1500KC signal.	"	A6	Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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PARTS LIST AND DESCRIPTIONS

MAJESTIC MODEL 5C-2

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amplifier	12BA6	12BA6	7BK	
V3A	Det.-AVC-AF Amp.	12AT6	12AT6	7BT	
B	Det.-AVC-AF Amp.	12AV6	12AV6	7BT	
V4	Audio Output	50C5	50C5	7CV	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MAJESTIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	5.415.5	PRS150/50-30-20		EDL44215		RVA-3448	Filter (Red)
B	40	150							Filter (Blue)
C	20	150							Decoupling (Green)
R2	47			SI47N750	TCN-47		N750K-470	5TCU-Q47	Osc. Grid Cap.
C3	.05	400		P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C4A	220		♦ 10.102		♦ PC-150				Diode RF Filter
B	.002								Audio Coupling
C	.005								Audio Coupling
D	220								AF Amp. Plate Bypass
E									Audio Output Grid
C5	.02	600		P688-02	DF-203	PTE6S2		6TM-S2	Audio Output Plate
C6	.047	400		4892GXY-05		PJ4S5		4TM-S47	Line Filter
C7	.1	400		P488-1	DF-104	PTE4P1		4TN-P1	Line Isolation

♦ Items C4A, C4B, C4C, C4D, C4E, R5A, R5B, R5C are combined in one unit.
When replacing items seperately, C4D and C4E should total 220MMF

CONTROLS

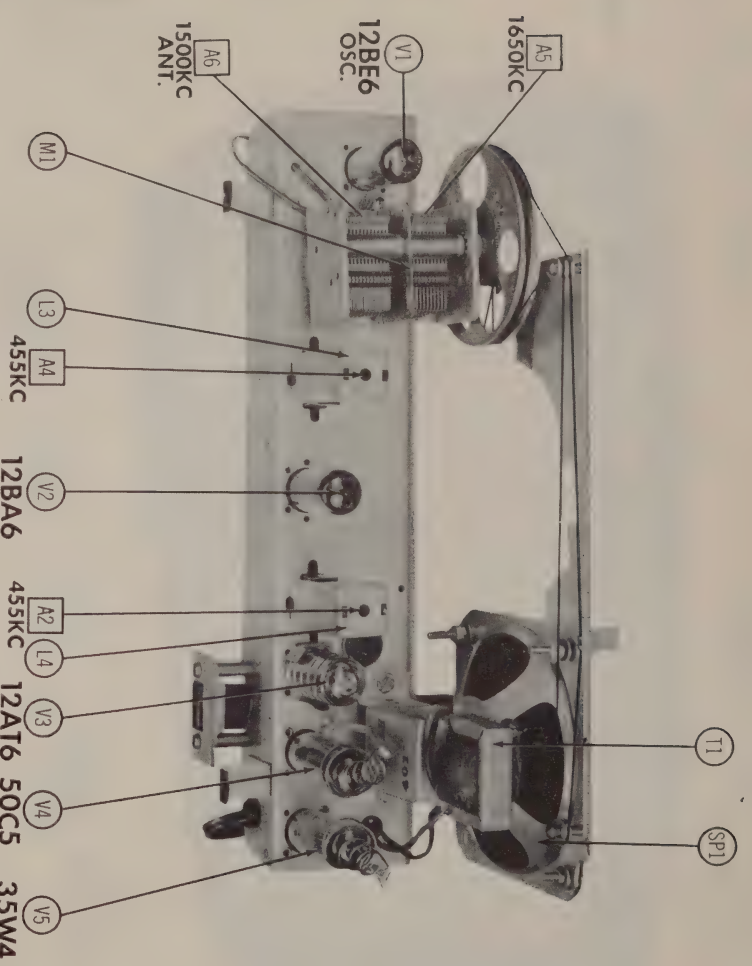
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAJESTIC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	8.200-11	Q13-137	AG-63-Z	BSK-70	Volume Control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MAJESTIC PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½			
R3	2.2Meg	½		BTS-2.2Meg	Osc. Grid
R4	6.8Meg	½		BTS-6.8Meg	AVC Network
R5A	6.8Meg	½		BTS-6.8Meg	Diode Filter
B	470KΩ	½	♦ 10.102	BTS-470K	AF Amp. Grid
C	470KΩ	½		BTS-470K	AF Amp. Plate
R6	150Ω	½		BTS-150	Output Grid
R7	100Ω	1		BTA-100	Output Cathode
R8	1000Ω	1		BTA-1000	Filter
					Filter

♦ Items R5A, R5B, R5C, C4A, C4B, C4C, C4D, C4E are combined in one unit

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MAJESTIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2.2KΩ	3.3Ω	165Ω	.5Ω	Part of 30.332-3H	A-3332 ①	A-3025 ①		① Bend down tabs, file out slots and mount on original bracket.

SPEAKER

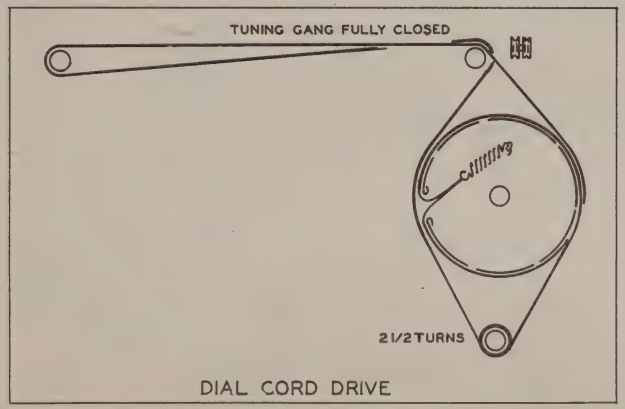
ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	MAJESTIC PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P.M.	3.3Ω	30.332-3H		4A1	
	CONE DIA.	V. C. DIA.				
SP1B	4"	9/16"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	MAJESTIC PART No.	MERIT PART No.	
L1	Loop Ant.	2.3Ω		1.550		* Drill Mounting Hole
L2	Osc. Coil	.5Ω	5Ω	1.526	BC-381 *	
L3	Input IF	19Ω	19Ω	1.445-2	BC-352	
L4	Output IF	8.3Ω	8.3Ω	1.445-6		

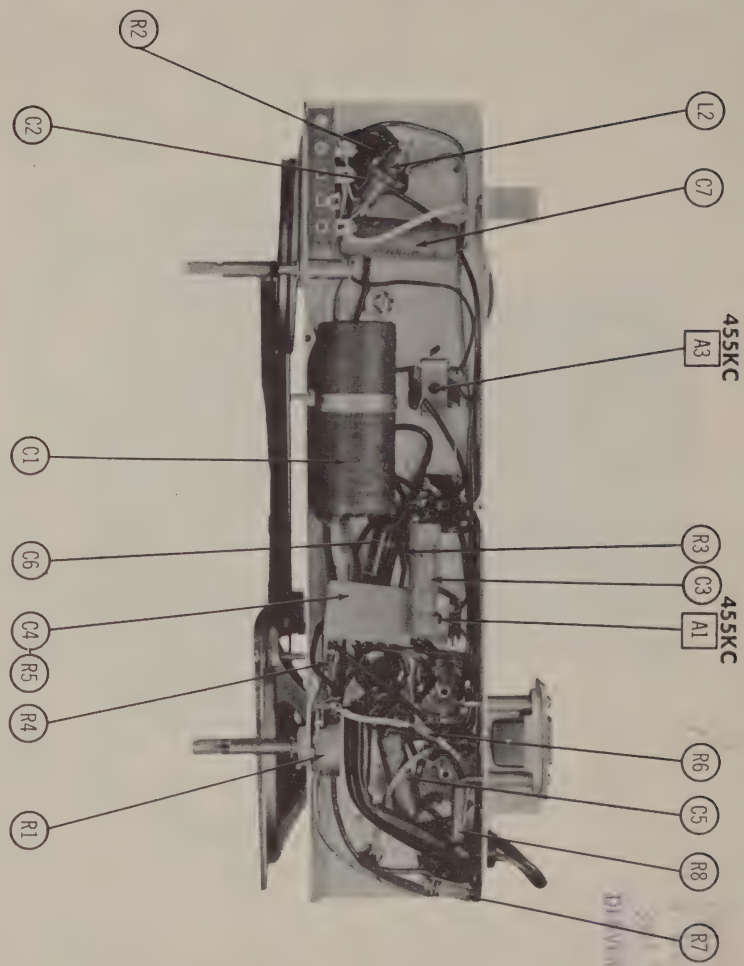
MISCELLANEOUS

ITEM No.	PART NAME	MAJESTIC PART No.	NOTES
M1	2 Gang Var. Cap.	2.163	(18-392 MMF, 33-217MMF)



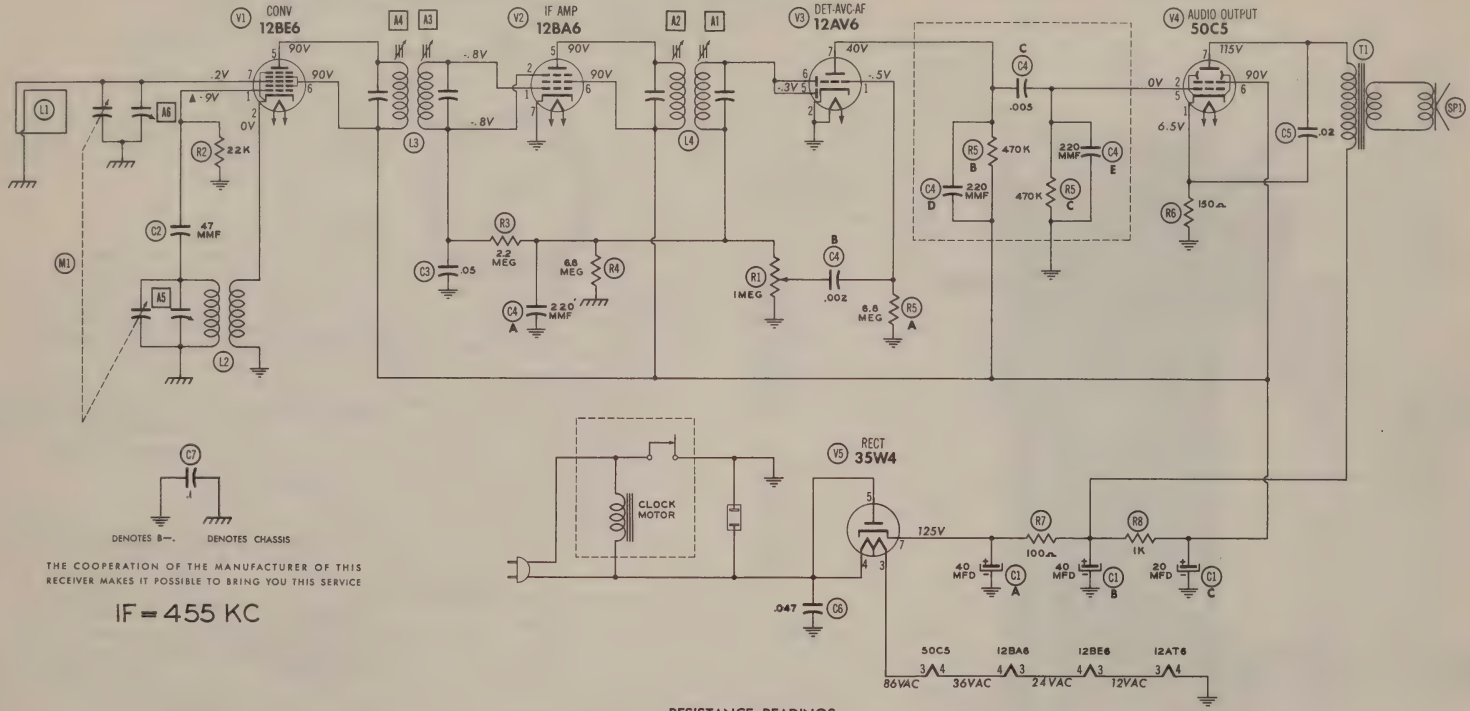
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



SET 169 FOLDER 10

MAJESTIC MODEL 5C-2



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.6Ω	12Ω	24Ω	†1.1KΩ	†1.1KΩ	7.8Meg
V 2	12BA6	3.2Meg	3.2Meg	24Ω	36Ω	†1.1KΩ	†1.1KΩ	0Ω
V 3	12AT6	6.8Meg	0Ω	12Ω	0Ω	1Meg	1Meg	†470KΩ
V 4	50C5	150Ω	470KΩ	86Ω	36Ω	470KΩ	†1.1KΩ	†265Ω
V 5	35W4	†100Ω	INF	86Ω	121Ω	121Ω	103Ω	55KΩ

† MEASURED FROM PIN 7 OF V5
▲ TAKEN WITH VACUUM TUBE VOLTMETER

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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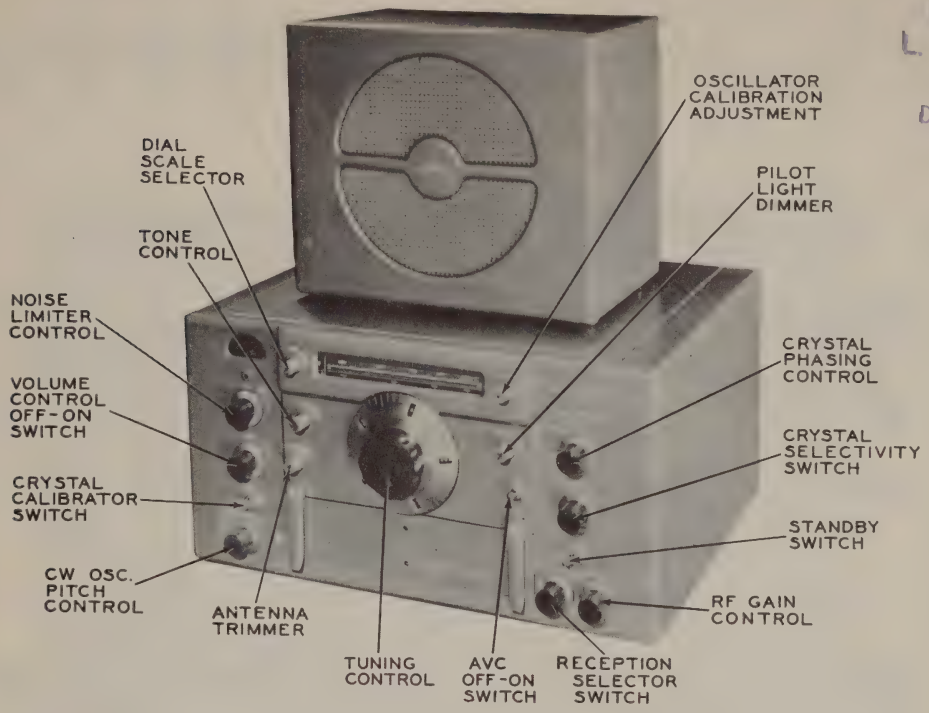
169-10

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measure

PROPERTY OF
L. F. BLANKE
3924 MEADE
DENVER, COLO

NATIONAL
MODELS HRO-50R1, HRO-50T1



NATIONAL
MODELS HRO-50R1, HRO-50T1

TRADE NAME	National Models HR0-R1 (Rack), HR0-T1 (Table)
MANUFACTURER	National Co., Inc., 61 Sherman St., Malden 48, Mass.
TYPE SET	AC Operated Multi-Band Communications Receiver
TUBES	Sixteen
POWER SUPPLY	110-120 Volts AC — **RATING** .880 Amp. @ 117 Volts AC

TUNING RANGES

Coil Set	Range	Coil Set	Range
A	14.0 -30.0MC	G	180 - 430 KC
B	7.0 - 14.4MC	H	100 - 200 KC
C	3.5 - 7.3MC	J	50 - 100 KC
D	1.7 - 4.0 MC	AA	27.5 -30 MC
E	900 - 2050KC	AB	25 - 35 MC
F	480-960 KC	AC	21.0 - 21.5 MC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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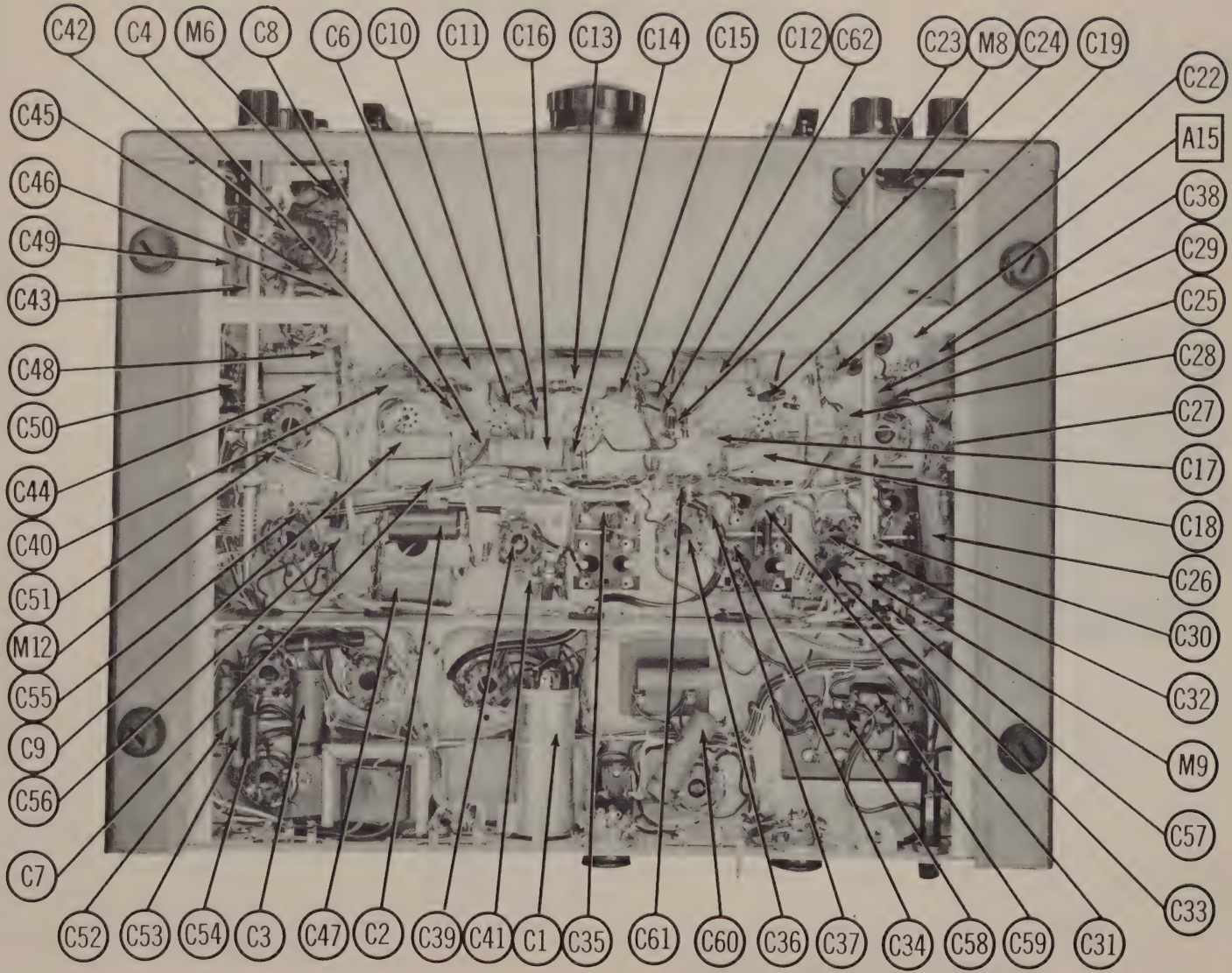
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M6
C8
C6
C10
C11
C16
C13
C14
C15
C12
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C19
C22
A15
C38
C29
C25
C28
C27
C17
C18
C26
C30
C32
M9
C57
C33
C31
C59
C58
C34
C37
C36
C60
C61
C35
C1
C41
C39
C2
C47
C3
C54
C53
C52
C7
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C9
C55
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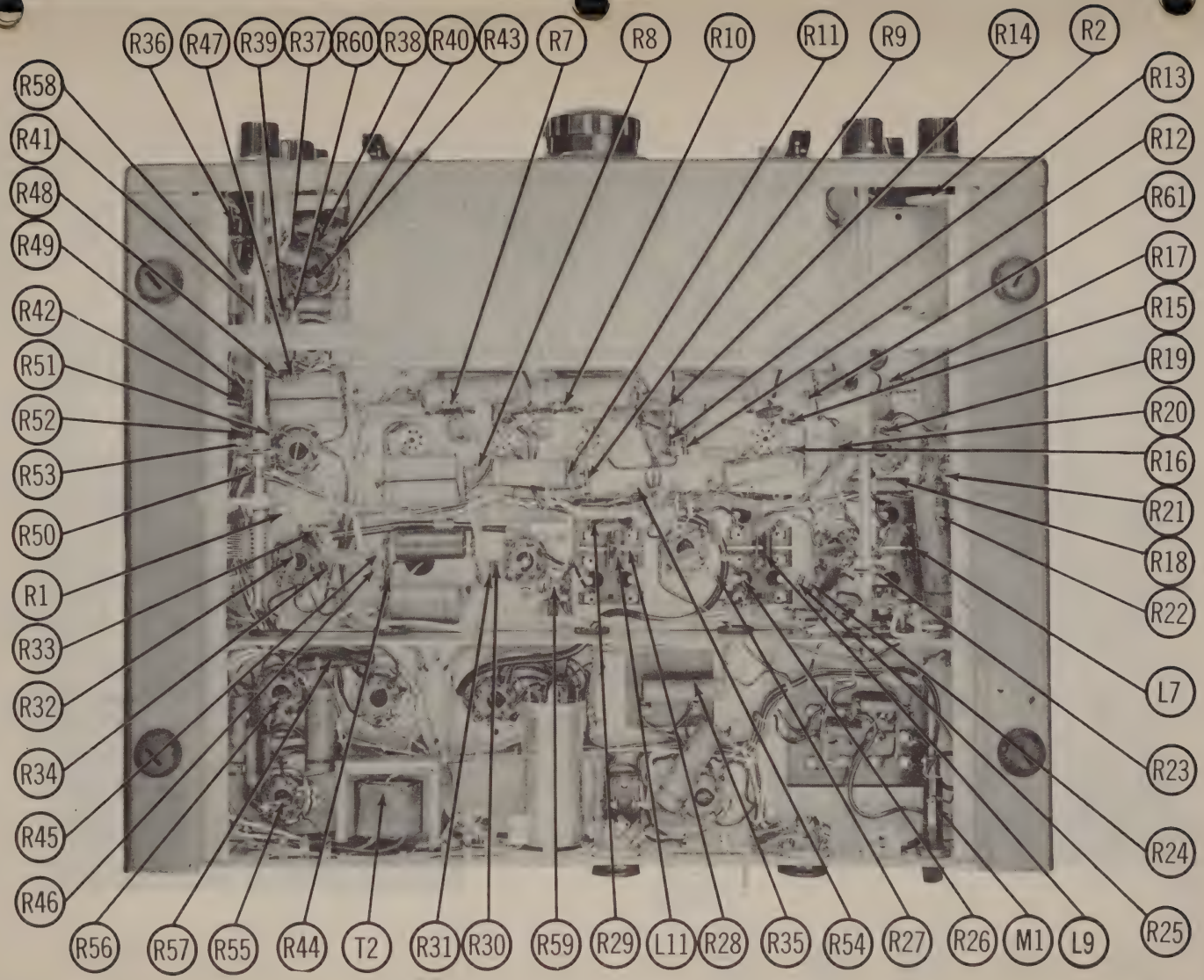
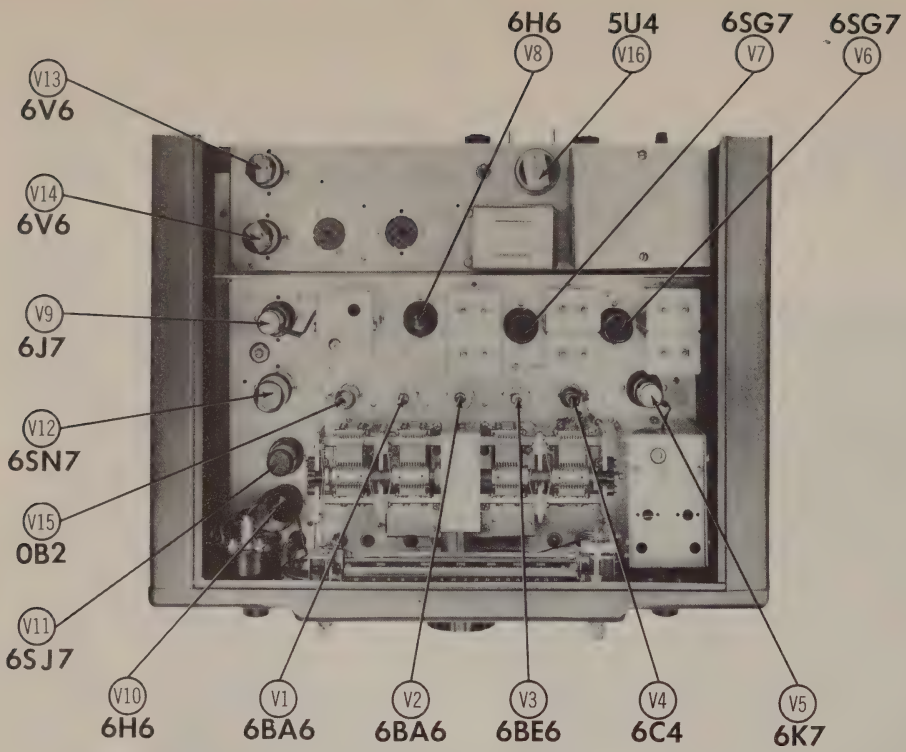
C51
C40
C44
C50
C48
C43
C49
C46
C45



NATIONAL
MODELS HRO-5OR1, HRO-5OT1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V8
5U4
V16
6SG7
V7
6SG7
V6
V13
6V6
V14
6V6
V9
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V12
6SN7
V15
0B2
V11
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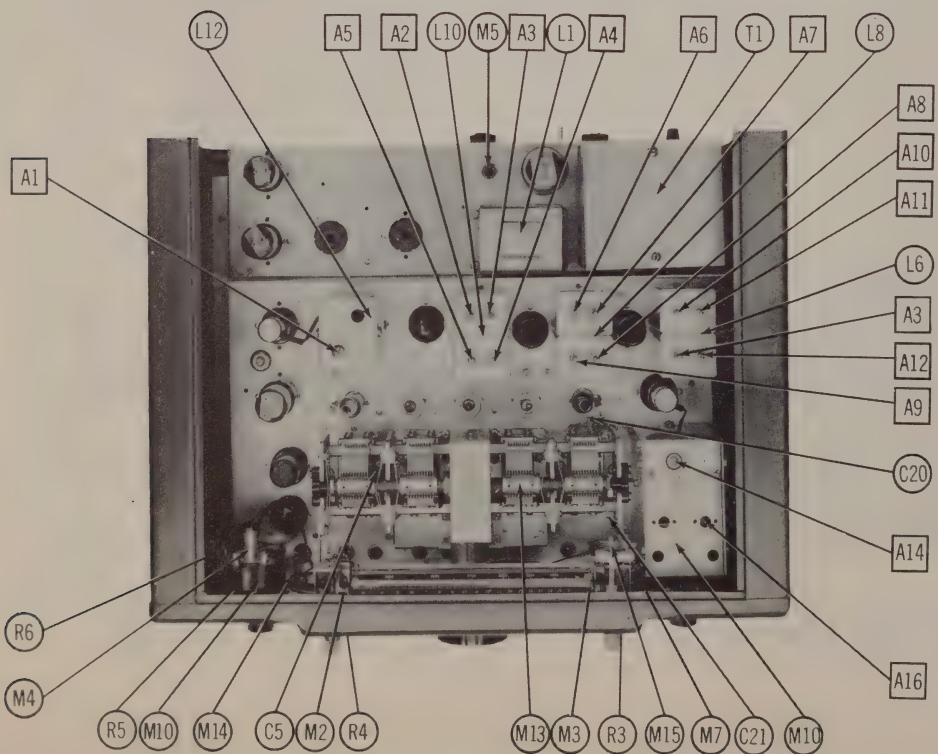
V3
6BE6
V4
6C4
V5
6K7


L12
A5
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L10
M5
A3
L1
A4
A6
T1
A7
L8
A8
A10
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L6
A3
A12
A9
C20
A14
A16
R6
M4
R5
M10
M14
C5
M2
R4
M13
M3
R3
M15
M7
C21
M10

ALIGNMENT INSTRUCTIONS

PROPERTY OF
L. F. BLA...
332... MAIN ST.
DENVER, COLORADO

MAIN TUNING DIAL

The main tuning dial should normally give no trouble.
In the event that the dial should become removed from the receiver it should NOT be operated until mounted on the capacitor shaft with set screws tight. The dial is designed to rotate for ten revolutions and if it is turned farther, damage to the mechanism may result.
Procedure for re-mounting the dial is as follows:
(a) Place the dial on the shaft, tighten set screws and turn the dial counter clockwise to fully mesh the capacitor plates. Tips of the rotor plates should be flush with the edge of the stator plates.
(b) Loosen the set-screws and rotate the dial slowly to read zero.
(c) Tighten the set-screws and check to insure that the tips of the rotor plates are flush with the edge of the stator plates. Slight readjustment may be necessary and this done by loosening the set-screws, readjusting the dial position, and tightening the set-screws again. Should it ever be necessary to remove the dial, turn to 250 before removing, and do not disturb the setting of either the dial or capacitor until reassembled. When the dial reads 250 the springs on the back of dial should be straight up and down.
It is important that the backplate and dial do not be come separated, as they may be returned in an incorrect relationship and the proper dial numbers will not appear in the dial windows.
To determine that the two parts are correctly positioned proceed as follows :
(a) Locate small window near outer edge of dial backplate and also locate the dial number window on face of dial which is 180° removed from the small backplate window.
(b) Hold dial so backplate lies flat in palm of left hand and with right hand rotate dial knob until 250 appears in dial window.
(c) If dial is properly adjusted the pointer at the outer edge of the small window lines up with a marked tooth on the dial itself. It will be found that the dial and backplate can be moved so that the backplate pointer will mesh between teeth at points equidistant from the marked tooth in either direction.
(d) If, by checking as in paragraph (c), the dial is found not properly adjusted, it will be necessary to separate the backplate and dial enough to bring the two gears out of mesh and then remesh them at another point, repeating until the correct mesh is found.

SLIDE RULE TUNING DIAL

To set the pointer:
(a) Check the main dial at zero setting to see that the tips of the rotor plates are flush with the edge of the stator plates.
(b) Set the Band Selector Control so that the "D" scale appear.
(c) Set the main tuning dial at 490. The correct setting of the pointer for this position is at 4 MC on the dial scale. It should be drawn along the cord to the correct position and cemented securely, meanwhile being careful not to disturb the capacitor setting.

ALIGNMENT INSTRUCTIONS

This receiver has been carefully aligned at the manufacturer's laboratories and is very stable. Realignment should not be necessary unless the receiver has been tampered with or unless component parts or tubes have been replaced.
It is to be preferred that the individual aligning the receiver be one who is familiar with communications receivers and experienced in their alignment.
The following test will determine the necessity of IF amplifier alignment:
1. Adjust the receiver for normal operation with the antenna disconnected.
2. Connect a pair of head phones to the phones jack.
3. Set the AVC switch at OFF.
4. Set the control switch at CW.
5. Set the phasing control at zero.
6. Set the selectivity switch at 5.
7. Set the RF gain at 10.
The AF gain control may be adjusted for comfortable listening volume and will not affect the test results.
Adjust the CWO control to a point where the predominate pitch of the background noise is lowest and a distinct crystal ring is heard. Note this setting of the CWO control.
Turn the selectivity switch to the off position, and again adjust the CWO control for lowest pitch of background noise.
Compare this setting of the CWO control with the first setting.
If they are identical, the IF amplifier is correctly aligned to the crystal filter frequency. If they are not identical, perform the IF amplifier alignment.

IF AMPLIFIER ALIGNMENT

Connect the high side of an accurately calibrated signal generator to the stator portion of the mixer section of the main tuning capacitor, M13. Connect the low side to chassis. Connect an output meter to the output terminals of the receiver.
Set the control switch at CW.
Set the AVC switch at OFF.
Set the phasing control at zero.
Set the selectivity switch at 5.
Set the AF gain control at 10
Set the RF gain control at 9
Adjust the signal generator for an unmodulated signal at approximately 455 KC and a generator output of approximately 100 micro-volts.
With the receiver operating, set the CWO control to provide an audio beat-note somewhere between 400 and 10000 cycles. The presence of this beat note is checked by connecting head phones or speaker to the receiver. If difficultly is encountered in obtaining such a beat note, adjust the CWO transformer trimmer, A1.
Slowly tune the signal generator between 453KC and 457 KC while watching the output meter for a sharp peak.
This peak indicated that the signal generator is tuned to the frequency of the IF crystal filter. Leave the generator at this setting for step 1 of the IF alignment.
Set the selectivity switch at OFF and the control switch at A. M.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Direct	High side to stator of mixer section of tuning gang. Low side to chassis.	IF Crystal frequency. (See above) (400%Mod.)	Plug in any unit	Point of non-interference.	Across output terminals.	A2, A3 A4, A5 A6, A7 A8, A9 A10, A11 A12, A13 A14, A15	Adjust for maximum output. Attenuate signal generator when necessary, to avoid overloading of circuits.
2.	"	"	Frequency of Step 1 plus 2KC.	"	"	"	A14	Set the selectivity control at 1 and adjust A14 for maximum output.
3.	"	"	Frequency of Step 1.	"	"	"	A16	Set the selectivity control to "Off" and adjust A16 for maximum output.

Turn the modulation of the signal generator off and set the control switch at CW. Rotate the CWO Control fully clockwise, where it should coincide with 5 on the scale.. If it does not, loosen and set to 5. Set the CWO control to obtain a zero beat with the signal generator. If the zero beat does not occur at 0 on the control dial, carefully re-adjust A1 for that condition.

GENERAL COVERAGE OSC. AND RF ALIGNMENT

The original alignment at the manufacturer's laboratories has been made with the use of precision, crystal-controlled test oscillators. Realignment requires that a reliable test signal source be available. The signal source should be of 1% accuracy, or better.
The need for realignment of the HF oscillator of any band is indicated when the frequency calibration of the receiver dial is in error by more than 1% at the high frequency end of the band in question.
Perform alignment as follows:
a. Disconnect the antenna.
b. Connect an output meter across the receiver output terminals.
c. Set the control switch at AM
d. Set the AVC switch at OFF
e. Set the selectivity switch at OFF
f. Set the RF gain control at 10.
g. Set the bandspread switch in the general coverage position.
h. Set the AF gain control to provide a suitable output level.
j. The ant. trim. and the osc. trimmer controls should be set with the pointers in vertical position, arrowheads pointing toward the top of the receiver.
Particular care must be taken when adjusting the high frequency oscillator trimmer in each coil set. This adjustment is the one listed first for each set.
It is essential that the high frequency oscillator operates at a frequency above the RF amplifier frequency and not below. Check by tuning in the image of the test signal which must appear 910 KC lower on the dial.
Failure of the image to appear at the proper point is corrected by decreasing the capacity of the oscillator trimmer until image and fundamental signals appear at their normal place on the dial.
After alignment of any coil set, the tracking at the low frequency end may be checked by slightly pressing the outside rotor plates of the main tuning capacitor section.
A change in capacity in either direction should decrease the receiver gain if the stage is tracking properly.

ALIGNMENT INSTRUCTIONS (CONT.)

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
4.	270Ω carbon resistor	High side through 270Ω to Ant. input terminal. Low side to chassis.	30MC (400~Mod.)	Plug in coil set "A"	30 MC	Across Output Terminals.	A17(pos.8) A18(pos.6) A19(pos.4)	Adjust in order given for maximum output.
5.	"	"	14.4MC	"	14.4MC	"	A20(pos.16) A21(pos.13) A22(pos.11) A23(pos.9)	Adjust in order given, for maximum output. Check step 4. Repeat steps 4 & 5 of necessary.
6.	"	"	"	Plug in coil set "B"	"	"	A24(pos.8) A25(pos.6) A26(pos.4) A27(pos.2)	Adjust in order given for maximum output.
7.	"	"	7.0MC	"	7.0MC	"	A28(pos.16) A29(pos.13) A30(pos.11) A31(pos.9)	Adjust in order given for maximum output. Check step 6. Repeat steps 6 & 7 if necessary.
8.	"	"	7.3MC	Plug in coil set "C"	7.3MC	"	A32(pos.8) A33(pos.6) A34(pos.4) A35(pos.2)	Adjust in order given for maximum output.
9.	"	"	3.5MC	"	3.5MC	"	A36(pos.16) A37(pos.13) A38(pos.11) A39(pos.9)	Adjust in order given for maximum output. Check step 8. Repeat steps 8 & 9 if necessary.
10	270Ω carbon resistor	High side through 270Ω to Ant. input terminal. Low side to chassis.	4.0MC (400~ mod.)	Plug in coil set "D"	4.0MC	Across output terminals	A40(pos.8) A41(pos.6) A42(pos.4)	Adjust in order given for maximum output.
11	"	"	1.8MC	"	1.8MC	"	A43(pos.16) A44(pos.13) A45(pos.11) A46(pos.9)	Adjust in order given for maximum output. Check Step 10. Repeat steps 10 & 11 if necessary.
12	"	"	2.0MC	Plug in coil set "E"	2.0MC	"	A47(pos.8) A48(pos.6) A49(pos.4)	Adjust in order given for maximum output.
13	"	"	1.0MC	"	1.0MC	"	A50(pos.7)	Adjust for maximum output.
14	"	"	1.4MC	"	1.4MC	"	A51(pos.16)	Adjust for maximum output. Check Step 12. Repeat steps 12, 13 & 14 if necessary.
15	"	"	0.9MC	Plug in coil set "F"	0.9MC	"	A52(pos.8) A53(pos.6) A54(pos.4) A55(pos.2)	Adjust in order given, for maximum output.
16	"	"	0.5MC	"	0.5MC	"	A56(pos.7)	Adjust for maximum output.
17	"	"	0.7MC	"	0.7MC	"	A57(pos.16)	Adjust for maximum output, check Step 15. Repeat steps 15, 16, & 17 if necessary.
18	270Ω carbon resistor	High side through 270Ω to Ant. input terminal. Low side to chassis.	400KC (400~Mod.)	Plug in coil set "G"	400KC	Across output terminals	A58(pos.8) A59(pos.6) A60(pos.4)	Adjust in order given for maximum output.
19	"	"	200KC	"	200KC	"	A61(pos.7)	Adjust for maximum output.
20	"	"	300KC	"	300KC	"	A62(pos.16)	Adjust for maximum output. Check step 18. Repeat steps 18, 19 & 20 if necessary.
21	"	"	200KC	Plug in coil set "H"	200KC	"	A63(pos.8) A64(pos.6) A65(pos.4) A66(pos.2)	Adjust in order given for maximum output.
22	"	"	100KC	"	100KC	"	A67(pos.7)	Adjust for maximum output.
23	"	"	150KC	"	150KC	"	A68(pos.16)	Adjust for maximum output. Check Step 21. Repeat steps 21, 22 & 23 if necessary.
24	"	"	100KC	Plug in coil set	100KC	"	A69(pos.8) A70(pos.6) A71(pos.4) A72(pos.2)	Adjust in order given for maximum output.
25	"	"	50KC	"	50KC	"	A73(pos.7)	Adjust for maximum output.
26	"	"	75KC	"	75KC	"	A74(pos.16)	Adjust for maximum output. Check Step 24. Repeat steps 24, 25 & 26 if necessary.
27	270Ω carbon resistor	High side through 270Ω to Ant. input terminal. Low side to chassis.	27.2MC	"	27.2MC	"	A75(pos.7) A76(pos.6) A77(pos.4) A78(pos.2)	Adjust in order given for maximum output.
28	"	"	27.2MC	"	27.2MC	"	A79(pos.8) A80(pos.5) A81(pos.3) A82(pos.1)	Adjust in order given for maximum output.
29	"	"	28MC	"	28MC	"	A83(pos.16) A84(pos.13) A85(pos.11) A86(pos.9)	Adjust in order given for maximum output.
30	"	"	35MC	Plug in coil set "AB"	35MC	"	A87(pos.8) A88(pos.6) A89(pos.4) A90(pos.2)	Adjust in order given for maximum output.
31	"	"	25MC	"	25MC	"	A91(pos.7) A92(pos.5) A93(pos.3) A94(pos.1)	Adjust in order given for maximum output.
32	"	"	30MC	"	30MC	"	A95(pos.16) A96(pos.13) A97(pos.11) A98(pos.9)	Adjust in order given for maximum output. Check Step 30. Repeat steps 30, 31 & 32, if necessary. Recheck Step 30.

33	"	"	21.5MC (400∿ mod.)	Plug in coil set "AC"	21.5MC	Across output terminals.	A99(pos.7) A100(pos.6) A101(pos.4) A102(pos.2)	Adjust in order given for maximum output.
34	"	"	21MC	"	21MC	"	A103(pos.8) A104(pos.5) A105(pos.3) A106(pos.1)	"
35	"	"	21.3MC	"	21.3MC	"	A107(pos.16) A108(pos.13) A109(pos.11) A110(pos.9)	Adjust in order given for maximum output. Check Step 33. Repeat Steps 33, 34 & 35, if necessary. Recheck Step 33.

PROPERTY OF L. F. BLAIR 3925 DECATUR ST. DENVER, COLORADO

BANDSPREAD OSC.& RF ALIGNMENT

Bandspread alignment should not be attempted without the use of a signal generator of crystal accuracy.
The entire range of test frequencies required may be covered with the use of nine crystals operating at their fundamental and harmonic frequencies.
The frequency of these crystals is as follows: 0.05, 0.1, 1.0, 2.0, 3.5, 5.0, 6.8, 7.0, 7.3, 14.4 and 15 megacycles.
Bandspread alignment must not be performed before general coverage alignment, since general coverage adjustments affect bandspread alignment.
The need for realignment of the HF oscillator of any band is indicated when the frequency calibration of the main tuning dial is in error by more than ± 5 divisions.
The pre-alignment settings of the receiver controls for bandspread alignment are the same as for general coverage alignment EXCEPT that the bandspread switch on each of the plug in coils must be in the right hand or bandspread position.
After alignment of any coil set, proper tracking at the low frequency end of the band may be checked by a slight readjustment of the trimmers at positions 1, 3, and 5. Change in capacitance in either direction should result in a decrease in output, indicating proper tracking. The trimmers should then be re-set at the high frequency end of the band.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
36	270Ω Carbon Resistor	High side through 270Ω to Ant. input terminal. Low side to chassis.	30MC (400∿ Mod.)	Plug in Coil set "A"	30 MC	Across output terminals	A111(Pos.7) A112(Pos.5) A113(Pos.3) A114(Pos.1)	Adjust in order given for max. output
37	"	"	27.2 MC	"	27.2 MC	"	A115(Pos15) A116(Pos.14) A117(Pos.12) A118(Pos.10)	Adjust in order given for max. output. Check step 36. Repeat steps 36 and 37, if necessary. Recheck step 36.
38	"	"	14.4 MC	Plug in Coil set "B"	14.4 MC	"	A119(Pos.7) A120(Pos.5) A121(Pos.3) A122(Pos.1)	Adjust in order given, for max. output.
39	"	"	14.0 MC	"	14.0 MC	"	A123(Pos15) A124(Pos.14) A125(Pos.12) A126(Pos.10)	Adjust in order given for max. output. Check step 38. Repeat steps 38 and 39 if necessary. Recheck step 38.
40	"	"	7.3 MC	Plug in Coil set "C"	7.3 MC	"	A127(Pos.7) A128(Pos.5) A129(Pos.3) A130(Pos.1)	Adjust in order given, for max. output.
41	"	"	7.0 MC	"	7.0 MC	"	A131(Pos.15) A132(Pos.14) A133(Pos.12) A134(Pos.10)	Adjust in order given for max. output. Check step 40. Repeat steps 40 and 41, if necessary. Recheck step 40.
42	"	"	40.0 MC (400∿ Mod.)	Plug in Coil set "D"	4.0 MC	"	A135(Pos.7) A136(Pos.5) A137(Pos.3) A138(Pos.1)	Adjust in order given, for max. output.
43	"	"	3.5 MC	"	3.5 MC	"	A139(Pos.15) A140(Pos.14) A141(Pos.12) A142(Pos.10)	Adjust in order given, for max. output. Check step 42. Repeat steps 42 and 43 if necessary. Recheck step 42.

FIRST RF STAGE ALIGNMENT WITH LOW IMPEDANCE TRANSMISSION LINE

If a low impedance transmission line is to be used with the receiver, it may be necessary to realign the first RF amplifier at the high frequency end of each band. To check for this possibility, rotate the Ant. Trim. Control. The presence of two definite peaks in output indicates that the first RF amplifier stage is tracking correctly, and either peak may be used. Lack of a peak, or presence of only one peak indicates improper tracking and need for correction .

GENERAL COVERAGE ADJUSTMENTS

Set the bandspread switch on each unit to be aligned to the left hand, or general coverage position.
Set control switch at AM.
Set selectivity switch at OFF.
Set Ant. Trim. Control pointer in a vertical position with arrow pointing to top of receiver.
Set AF gain control at 10.
Set RF gain to provide a suitable listening volume.
Coil sets A and D do not use a first RF amplifier general coverage trimmer but are peak-tuned by the Ant. Trim. control over the full frequency range of each set.
Connect the antenna feeders to the receiver antenna terminals and tune the receiver to the signal frequency first shown on the General Coverage Osc. and RF Alignment Chart for each coil set (Coil Set "A" 30 MC, Coil Set "B" 7 MC, etc). Peak trimmers as follows for maximum signal or if no signal is present, for maximum background noise.

Coil set A	Adjust Ant. Trim. Control
" " B	" A27
" " C	" A35
" " D	" Ant. Trim. Control
" " F	" A55
" " H	" A66
" " J	" A72
" " AA	" A78
" " AB	" A90
" " AC	" A102

BANDSPREAD ADJUSTMENTS

Set the bandspread switch on each unit to be aligned to the right hand, or bandspread position.
Set the receiver controls in the same manner as for general coverage.
Connect the antenna feeders to the receiver antenna terminals and tune the receiver to the signal frequency first shown on the bandspread osc. and RF alignment chart for each coil set.
Peak trimmers as follows for maximum signal or, if no signal is present, for maximum background noise.

Coil Set A	Adjust A114
" " B	" A122
" " C	" A130
" " D	" A138

S-METER ADJUSTMENT

The S-Meter balancing resistor, R1, is used to obtain a zero meter reading in the absence of a signal input to the receiver.
To adjust set controls as follows:
1. RF gain control at 0.
2. AVC switch at AVC.
3. Control switch at AM.
4. AC switch at ON.
Adjust R1 for a zero reading on the S-Meter.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: NATIONAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	1st. RF Amplifier	6BA6	6BA6	7BK	
V2	2nd. RF Amplifier	6BA6	6BA6	7BK	
V3	Mixer	6BE6	6BE6	7CH	
V4	HF Oscillator	6C4	6C4	6BG	
V5	1st. IF Amplifier	6K7	6K7	7R	
V6	2nd. IF Amplifier	6SG7	6SG7	8BK	
V7	3rd. IF Amplifier	6SG7	6SG7	8BK	
V8	Detector-AVC	6H6	6H6	7Q	
V9	C.W. Oscillator	6J7	6J7	7R	
V10	Noise Limiter	6H6	6H6	7Q	
V11	AF Amplifier	6SJ7	6SJ7	8N	
V12	Phase Inverter-S Meter Amp.	6SN7GT	6SN7GT	8BD	
V13	Audio Output	6V6GT	6V6GT	7AC	
V14	Audio Output	6V6GT	6V6GT	7AC	
V15	Voltage Reg.	0B2	0B2	5B0	
V16	Rectifier	5V4G	5V4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: NATIONAL PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	475	K945-3	AFH2-72		UP4450		TVL-2830	▲ Filter
B	40	475							▲ Filter
C2	25	50	E338-4	PRS50/25		BR255A		TVA-1306	AF Amp. Cathode Bypass
C3	25	50	E338-4	PRS50/25		BR255A		TVA-1306	Audio Output Cathode
C4	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	AVC Filter
C5	10000	500	J666-56	1467-01	DD-103	1D3S1	821-01	1FM-11	AVC Filter
C6	.1	600	D827-13	P688-1	DF-104	PTE6P1		6TM-P1	1st. RF Amp. Plate Dec.
C7	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	1st. RF Amp. Screen
C8	5000		K946-1	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. RF Amp. Screen
C9	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	1st. RF Amp. Cathode
C10	5000		K946-1	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. RF Amp. Cathode
C11	5000		K946-1	BPD-005	DD-502	TM5D5	811-005	5HK-D5	AVC Filter
C12	5000		K946-1	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. RF Amp. Plate Dec.
C13	.1	600	D827-13	P688-1	DF-104	PTE6P1		6TM-P1	2nd. RF Amp. Plate Dec.
C14	5000		K946-1	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. RF Amp. Screen
C15	5000		K946-1	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. RF Amp. Cathode
C16	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	2nd. RF Amp. Cathode
C17	10000	500	J666-56					MS-11	Osc. Coupling
C18	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	Osc. Plate Bypass
C19	100	500	D825D-421	1469-0001		5R5T1		MS-31	Osc. Grid Cap.
C20	5		H872-3	SI5NP0	TCZ-4.7		NP0K-050		Fixed Trimmer
C21	10		D825D-437	SII0NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C22	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Mixer Plate Dec.
C23	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	Mixer Screen Bypass
C24	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Mixer Cathode Bypass
C25	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	AVC Filter
C26	.25	600	D827-19	684-25		PTE6P25		6TM-P25	1st. IF Amp. Plate Dec.
C27	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	1st. IF Amp. Screen
C28	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	1st. IF Amp. Screen
C29	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	1st. IF Amp. Cathode
C30	1000			SII000	D6-102	TM5D1	GP2L-102	5HK-D1	AVC Filter †
C31	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	2nd. IF Amp. Plate Dec.
C32	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	2nd. IF Amp. Screen
C33	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	2nd. IF Amp. Cathode
C34	1000			SII000	D6-102	TM5D1	GP2L-102	5HK-D1	AVC Filter †
C35	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	3rd. IF Amp. Plate Dec.
C36	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	3rd. IF Amp. Screen
C37	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	3rd. IF Amp. Cathode
C38	.25	400	D827-15	P488-25		PTE4P25		4TM-P25	RF Bypass
C39	100		D825D-421	SII00	D6-101	TM5T1	GP1K-101	5GA-T1	IF Coupling
C40	.01	600	D827-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	"S" Meter Amp. Filter
C41	270		J633-2	SI270	D6-271	5W5T2S	GP2K-271	5GA-T27	Diode RF Filter
C42	.01	600	D827-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C43	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	RF Bypass
C44	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	RF Bypass †
C45	.01	600	D827-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C46	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	AF Amp. Screen Bypass

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ↜)	REPLACEMENT DATA: NATIONAL PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
L1	.065A	280Ω	17 Henries	SA:1694		C-3192 ①	R-23110 ①	① Drill New Mtg. Holes

COILS (RF-IF)

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: NATIONAL PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
L2A	Ant. Trans.	.2Ω	.1Ω	SA:6654		14.0 - 30MC A Band
B	Ant. Trans.	.2Ω	.1Ω	SA:6755		7.0 - 14.4MC B Band
C	Ant. Trans.	.2Ω	.1Ω	SA:6759		3.5 - 7.3MC C Band
D	Ant. Trans.	.4Ω	.6Ω	SA:6635		1.7 - 4.0MC D Band
E	Ant. Trans.			SA:6513		900 - 2050KC E Band
F	Ant. Trans.			SA:6660		480 - 960KC F Band
G	Ant. Trans.			SA:6665		180 - 430KC G Band
H	Ant. Trans.			SA: 6803		100 - 200KC H Band
I	Ant. Trans.			SA: 6806		50 - 100KC J Band
J	Ant. Trans.			SA:6814		27 - 30MC AA Band
K	Ant. Trans,			SA:6675		25 - 35MC AB Band
L	Ant. Trans.			SA:8073		21 - 21.5MC AC Band
L3A	1st.RF Trans.	.6Ω	0Ω	SA:6751		14.0 - 30MC A Band Tertiary Winding 9Ω
B	1st.RF Trans.	.5Ω	.1Ω	SA:6650		7.0 - 14.4MC B Band
C	1st.RF Trans.	9.5Ω	.1Ω	SA:6641		3.5 - 7.3MC C Band
D	1st.RF Trans.	22Ω	.6Ω	SA:6637		1.7 - 4.0MC D Band
E	1st.RF Trans.			SA:6540		900 - 2050KC E Band
F	1st.RF Trans.			SA:6662		480 - 960KC F Band
G	1st.RF Trans.			SA:6667		180 - 430KC G Band
H	1st.RF Trans.			SA:6669		100 - 200KC H Band
I	1st.RF Trans.			SA:6809		50 - 100KC J Band
J	1st.RF Trans.			SA:6673		27 - 30MC AA Band
K	1st.RF Trans.			SA:6818		25 - 35MC AB Band
L	1st.RF Trans.			SA:8074		21 - 21.5MC AC Band
L4A	2nd.RF Trans.	.6Ω	0Ω	SA:6752		14.0 - 30MC A Band Tertiary Winding 9Ω
B	2nd.RF Trans.	.2Ω	.1Ω	SA:6756		7.0 - 14.4MC B Band
C	2nd.RF Trans.	9.5Ω	.1Ω	SA:6642		3.5 - 7.3MC C Band
D	2nd.RF Trans.	21Ω	.6Ω	SA:6638		1.7 - 4.0MC D Band
E	2nd.RF Trans.			SA:6789		900 - 2050KC E Band
F	2nd.RF Trans.			SA:6794		480 - 960KC F Band
G	2nd.RF Trans.			SA:6800		180 - 430KC G Band
H	2nd.RF Trans.			SA:6804		100 - 200KC H Band
I	2nd.RF Trans.			SA:6810		50 - 100KC J Band
J	2nd.RF Trans.			SA:6815		28 - 30MC AA Band
K	2nd.RF Trans.			SA:6676		25 - 35MC AB Band
L	2nd.RF Trans.			SA:8075		21 - 21.5MC AC Band
L5A	HF Osc.	.1Ω		SA:6656		14.0 - 30MC A Band
B	HF Osc.	.1Ω		SA:6678		7.0 - 14.4MC B Band
C	HF Osc.	.1Ω		SA:6760		3.5 - 7.3MC C Band
D	HF Osc.	.4Ω		SA-6776		1.7 - 4.0MC D Band Tap ④ .1Ω
E	HF Osc.			SA:6631		900 - 2050KC E Band
F	HF Osc.			SA:6795		480 - 960KC F Band
G	HF Osc.			SA:6785		180 - 430KC G Band
H	HF Osc.			SA:6805		100 - 200KC H Band
I	HF Osc.			SA:6811		50 - 100KC J Band
J	HF Osc.			SA:6816		27 - 30MC AA Band
K	HF Osc.			SA:6819		25 - 35MC AB Band
L	HF Osc.			SA:8076		21 - 21.5MC AC Band
L6A	2nd.IF Trans. Input	2Ω	2Ω	SA:8448		
B	2nd.IF Trans. Output	2Ω	2Ω			Part of L6A
L7	RF Choke	.1Ω		SA:6072		
L8A	3rd.IF Trans. Input	2Ω	2Ω	SA:8448		
B	3rd.IF Trans. Output	2Ω	2Ω			Part of L8A
L9	RF Choke	.1Ω		SA:6072		
L10A	4th.IF Trans. Input	2Ω	2Ω	SA:8948		
B	4th.IF Trans. Output	2Ω	2Ω			Part of L10A
L11	RF Choke	.1Ω		SA:8952		
L12	BFO Coil	47KΩ		SA:3361		Tap at 1.8Ω. Includes Trimmer, 2 Capacitors and Resistor.

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA NATIONAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C47	.5	100	D827-49	P185-5		PJ2P5		2TM-P5	AF Amp. Cathode Bypass
C48	.1	400	D827-12	P488-1	DF-104	PTE4P1		4TM-P1	RF Bypass
C49	.01	600	D827-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Tone Comp.
C50	.01	600	D827-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C51	100		D825D-421	S1100	D6-101	TM5T1	GP1K-101	5GA-T1	Phase Inv. Grid Filter
C52	.01	600	D827-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C53	.01	600	D827-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C54	2400	1000	J667-68						Audio Output Plate
C55	3		J695-4				N330K-030		BFO Coupling
C56	10000	500	J666-56	1467-01	D6-103	1D3S1	GP2-333-103	1FM-11	BFO Screen Bypass
C57	.01	600	D827-7	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	RF Bypass
C58	10000	500	J666-56	1467-01		1D3S1		1FM-11	Line Filter
C59	10000	500	J666-56	1467-01		1D3S1		1FM-11	Line Filter
C60	.1	600	D827-13	P688-1		PTE6P1		6TM-P1	Rectifier Plate
C61	10		D825D-402	S110NP0	TCZ-10		NP0K-100	5TCC-Q1	NBFM IF Coupling
C62	10000		K946-2	BPD-01	DD-103	TM5S1	821-01	5HK-S1	Mixer Screen Bypass *

* Not used in all models.
† Some models use 10000MMF in this application

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA NATIONAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1	1000Ω	1	D831-2	WK-1000	43-1000	VK-129	"S" Meter Zero Adjustment Control - Wire Wound
R2	10KΩ	2	K349-3				RF Gain Control - Wire Wound
R3	25Ω	2	K915-13	W-25	43-25	V-111	Dimmer Control - Wire Wound
R4A	500KΩ	½	K347-1	Q13-133	AM-60-Z	B-60-S	Tone Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R4A per instructions
C	Switch		Not Req.	76-1	SWA	Not Req.	Attach to R4A per instructions
R5A	500KΩ	½	K347-1	Q13-133	AM-60-Z	B-60-S	AF Gain Control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R5A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R5A per instructions
R6A	500KΩ	½	J681-2				Limiter Control & SW

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA NATIONAL PART No.	IRC PART No.	IDENTIFICATION CODES
R7	470K	½	J569-57	BTS-470K	AVC Network
R8	100Ω	½	J569-13	BTS-100	1st.RF Amp. Cathode
R9	2200Ω	½	J569-29	BTS-2200	Screen Dropping
R10	470KΩ	½	J569-57	BTS-470K	AVC Network
R11	560Ω	½	J569-22	BTS-560	2nd. RF Amp. Cathode
R12	22KΩ	½	J569-41		Mixer Grid
R13	220Ω	½	J569-17	BTS-220	Mixer Cathode
R14	33KΩ	1	J571-43	BTA-33K	Mixer Screen
R15	22KΩ	½	J569-41		HF Osc. Grid
R16	22Ω	½	J569-5		Parasitic Suppressor
R17	470KΩ	½	J569-47	BTS-470K	AVC Network
R18	27KΩ	2	J572-42		Voltage Divider
R19	220Ω	½	J569-17	BTS-220	1st.IF Amp. Cathode
R20	680Ω	½		BTS-680	1st.IF Amp. Cathode - See Note 1
R21	15KΩ	2	J572-39		Screen Dropping
R22	2200Ω	1	J569-29	BTA-2200	Decoupling
R23	470KΩ	½	J569-57	BTS-470K	AVC Network
R24	68Ω	½	J569-11		2nd. IF Amp. Cathode
R25	47KΩ	½	J569-45	BTS-47K	2nd. IF Amp. Screen
R26	470KΩ	½	J569-57		3rd.IF Amp. Grid
R27	68Ω	½	J569-11		3rd.IF Amp. Cathode
R28	47KΩ	½	J569-45	BTS-47K	3rd.IF Amp. Screen
R29	2200Ω	½	J569-29	BTS-2200	Decoupling
R30	1.5Meg	½	J569-63	BTS-1.5Meg	AVC Diode Load
R31	1.5Meg	½	J569-63	BTS-1.5Meg	AVC Network
R32	220KΩ	½	J569-53	BTS-220K	C.W.Osc. Plate
R33	100KΩ	½	J569-49	BTS-100K	C.W. Osc. Screen
R34	100KΩ	½	J569-49	BTS-100K	Voltage Divider

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA NATIONAL PART No. FUSE	NATIONAL PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	AGC	2A. 250V.	F135-4		312002 (3AG)	342001	AGC2	HKP

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA NATIONAL PART No.		NOTES
M2	Bayonet	6-8	.15	Brown	F136-6		Type #47
M3	Bayonet	6-8	.15	Brown	F136-6		Type #47
M4	Bayonet	6-8	.15	Brown	F136-6		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	NATIONAL PART No.	NOTES
M5	Switch	H340-4	Line Voltage
M6	Switch	P738-1	Calibrate
M7	Switch	E230-2	AVC
M8	Switch	E230-2	B+ on/off
M9	Switch	SA:6564	Function Selector
M10	IF Coil		IF Primary
	Trimmer		
	Capacitor	J695-3	62 MMF
	Trimmer	D832-2	Phase Balance Adj. (3.5-35MMF)
	Capacitor	J695-1	47MMF
	Trimmer	SA:3655	Phasing Control
	Crystal	E979-1	455KC
	Switch	E195-3	Selectivity
	Capacitor	D825D-401	5MMF
	Capacitor	D825D-426	10MMF
	Capacitor	D825D-426	10MMF
	Trimmer	D832-2	Selectivity (3.5-35MMF)
	Trimmer	SA:1841	IF Output
	Coil		IF Output
			Complete Assembly Part No. SA:3654
M11	Meter	J984-5	Carrier Level (0-1MA)
M12	Tuning Cap.	SA:6580	CW Osc. Adj.
M13	Tuning Gang	SA:6592	Main (4 Sections)
M14	Tuning Cap.	SA:6577	Antenna
M15	Tuning Cap.		Oscillator
	Dial Scale	P136-1	Band "A"
	Dial Scale	P136-2	Band "B"
	Dial Scale	P136-3	Band "C"
	Dial Scale	P136-4	Band "D"
	Dial Scale	P136-5	Band "A" (Bandspread Only)
	Dial Scale	P136-6	Band "B" (Bandspread Only)
	Dial Scale	P136-7	Band "C" (Bandspread Only)
	Dial Scale	P136-8	Band "D" (Bandspread Only)
	Dial Scale	P136-9	Bands "E" and "F"
	Dial Scale	P136-10	Bands "G" and "H"
	Dial Scale	P136-11	Band "J"
	Dial Scale	P136-12	Band "AA"
	Dial Scale	P136-13	Band "AB"
	Dial Scale	P136-14	Band "AC"
	Knob	SA:7021	Tone, Ant. Trimmer, and Dimmer Controls (3 used)
	Knob	SA:6586	Main Tuning
	Window	P211-1	Dial Scale
	Knob	SA:6867	RF Gain Control
	Knob	SA:6868	Phasing and CWO Controls (2 used)
	Knob	SA:6869	Selectivity Control
	Knob	SA:6870	Limiter Control
	Knob	SA:6587	Function Selector Switch
	Knob	SA:6871	AF Gain Control
	Knob	SA:7021	Band selector and Oscillator Control (2 used)
	CWO Shaft	Q534-1	

PROPERTY OF
L. F. BLANKENSHIP
[illegible] DE ST.
[illegible] COLORADO

NATIONAL
MODELS HRO-50R1, HRO-50T1

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	NATIONAL PART No.	IRC PART No.	
R35	5000Ω	10	E959-10	1 3/4A-5000	Decoupling - Wire Wound
R36	22KΩ	½	J569-41	BTS-22K	Diode Filter
R37	470KΩ	½	J569-57	BTS-470K	Det. Diode Load
R38	220KΩ	½	J569-53	BTS-220K	Noise Limiter Plate
R39	220KΩ	½	J569-53	BTS-220K	Noise Limiter Cathode
R40	470KΩ	½	J569-57	BTS-470K	Noise Limiter Plate
R41	220KΩ	½	J569-53	BTS-220K	Voltage Divider
R42	820KΩ	½	J569-60	BTS-820K	Decoupling
R43	220KΩ	½	J569-53	BTS-220K	Voltage Divider
R44	2200Ω	½	J569-29	BTS-2200	AF Amp. Cathode
R45	150Ω	½	J569-15	BTS-150	AF Amp. Cathode
R46	6800Ω	½	J569-35	BTS-6800	Feedback Network
R47	470KΩ	½	J569-57	BTS-470K	AF Amp. Screen
R48	100KΩ	½	J569-49	BTS-100K	AF Amp. Plate
R49	47KΩ	½	J569-45	BTS-48K	AF Amp. Decoupling
R50	220KΩ	½	J569-53	BTS-220K	Phase Inv. Grid
R51	4700Ω	½	J569-33	BTS-4700	Phase Inv. Cathode
R52	47KΩ	½	J569-45	BTS-47K	Phase Inv. Cathode
R53	47KΩ	½	J569-45	BTS-47K	Phase Inv. Plate
R54	47KΩ	½	J569-45	BTS-47K	"S" Meter Amp. Plate
R55	220KΩ	½	J569-53	BTS-220K	Output Grid
R56	220KΩ	½	J569-53	BTS-220K	Output Grid
R57	220Ω	2	J572-17		Output Cathode
R58	470Ω	2	J572-21	BTB-470	Voice Coil Shunt
R59	4.3Ω	1	K099-48		Filament Dropping - Wire Wound
R60	4.3Ω	1	K098-48		Filament Dropping - Wire Wound
R61	2200Ω	½		BTS-2200	Mixer Plate Decoupling - See Note 2

Note 1. This Resistor may be of any value from 330Ω to 1000Ω
Note 2. Not used in all Models

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC Ⓐ.880A Pri #2 220VAC	510VCT .135ADC	5VAC 2A	6.3VAC 4.8A	SA:6566			

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		NATIONAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	6.7KΩ CT	500Ω Tap Ⓐ 8Ω	310Ω CT	20Ω Tap Ⓐ .7Ω	P187-1				

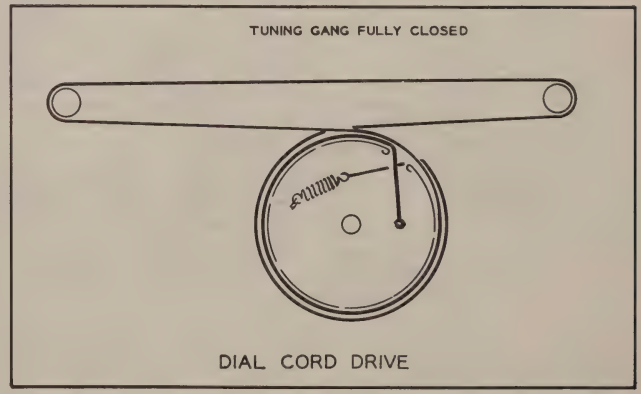
SPEAKER

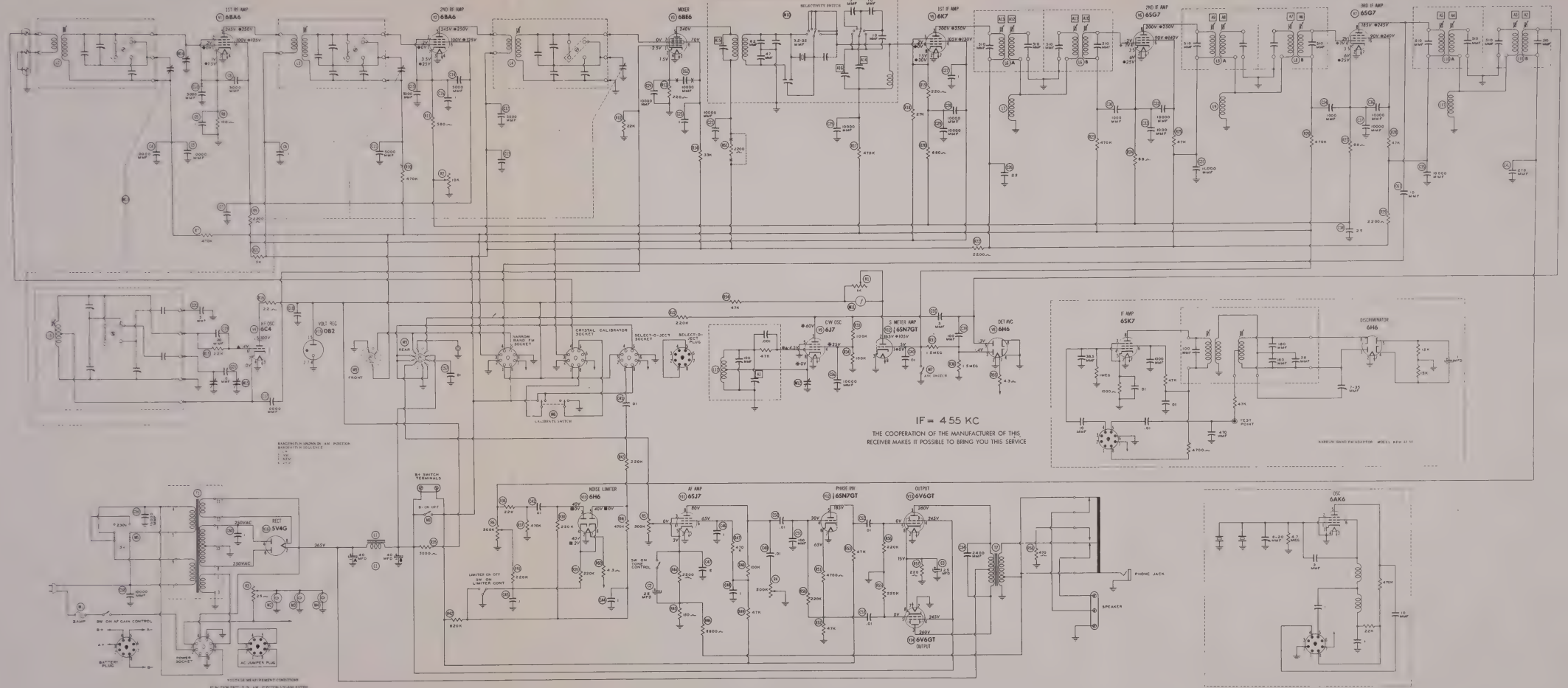
ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	NATIONAL PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	P.M.	6.5Ω	P297-1	ST-120 P10-S		
	CONE DIA.	V. C. DIA.				
SP1B	10"	3/4"				

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BA6	3.5 Meg ¶470KΩ	100Ω	0Ω	.1Ω	†280Ω	†17KΩ	100Ω		
V 2	6BA6	3.5Meg ¶470KΩ	560Ω ■5.5KΩ	0Ω	.1Ω	†280Ω	†17KΩ	560Ω ■5.5KΩ		
V 3	6BE6	22KΩ	220Ω	.1Ω	0Ω	†2.5KΩ	†35KΩ	9Ω		
V 4	6C4	†5.3KΩ	0Ω	.1Ω	0Ω	†5.3KΩ	22KΩ	0Ω		
V 5	6K7	0Ω	0Ω	†2.5KΩ	†15KΩ	1KΩ ■5.6KΩ	900Ω ■5.3KΩ	.1Ω	1KΩ ■5.6KΩ	3.5Meg ¶470KΩ
V 6	6SG7	0Ω	0Ω	68Ω ■4.6KΩ	3.5Meg ¶470KΩ	68Ω ■4.6KΩ	†49KΩ	.1Ω	†2.5KΩ	
V 7	6SG7	0Ω	0Ω	68Ω ■4.6KΩ	3.5Meg ¶470KΩ	68Ω ■4.6KΩ	†51KΩ	.1Ω	†4.7KΩ	
V 8	6H6	0Ω	0Ω	1.5Meg ¶750KΩ	0Ω	110KΩ ‡215KΩ	110KΩ ‡215KΩ	1.9Ω	0Ω	
V 9	6J7	0Ω	0Ω	#†120KΩ	100KΩ	0Ω	#†280Ω	.1Ω	1.8Ω	47KΩ
V 10	6H6	0Ω	0Ω	†1Meg ‡220KΩ	220KΩ ‡440KΩ	†1.3Meg ‡470KΩ	†1.5Meg ‡690KΩ	1.9Ω	220KΩ ‡44KΩ	
V 11	6SJ7	0Ω	0Ω	2.3KΩ	.7Ω	2.3KΩ	†515KΩ	.1Ω	†150KΩ	
V 12	6SN7GT	3Meg ¶0Ω	†53KΩ	0Ω	265KΩ	†47KΩ	52KΩ	0Ω	.1Ω	
V 13	6V6GT	0Ω	0Ω	†155Ω	†280Ω	220KΩ	†155Ω	.1Ω	220Ω	
V 14	6V6GT	0Ω	0Ω	†155Ω	†280Ω	220KΩ	†280Ω	.1Ω	220Ω	
V 15	0B2	†5.3KΩ	0Ω	INF	0Ω	†5.3KΩ	INF	0Ω		
V 16	5V4G	INF	32KΩ	INF	119Ω	INF	114Ω	INF	32KΩ	

FUNCTION SWITCH IN "AM" POSITION UNLESS NOTED
LIMITER IN "OFF" POSITION UNLESS NOTED
B+ SWITCH IN "ON" POSITION
CALIBRATE SWITCH IN OFF POSITION
AVC SWITCH IN "ON" POSITION UNLESS NOTED
RF GAIN CONTROL FULLY CLOCKWISE UNLESS NOTED
† MEASURED FROM PIN 2 OF V16
# FUNCTION SWITCH IN "CW" POSITION
¶ AVC SWITCH IN "OFF" POSITION
‡ LIMITER SWITCH IN "ON" POSITION FULLY CLOCKWISE
■ RF GAIN CONTROL AT ZERO





A PHOTOFACT STANDARD NOTATION SCHEMATIC

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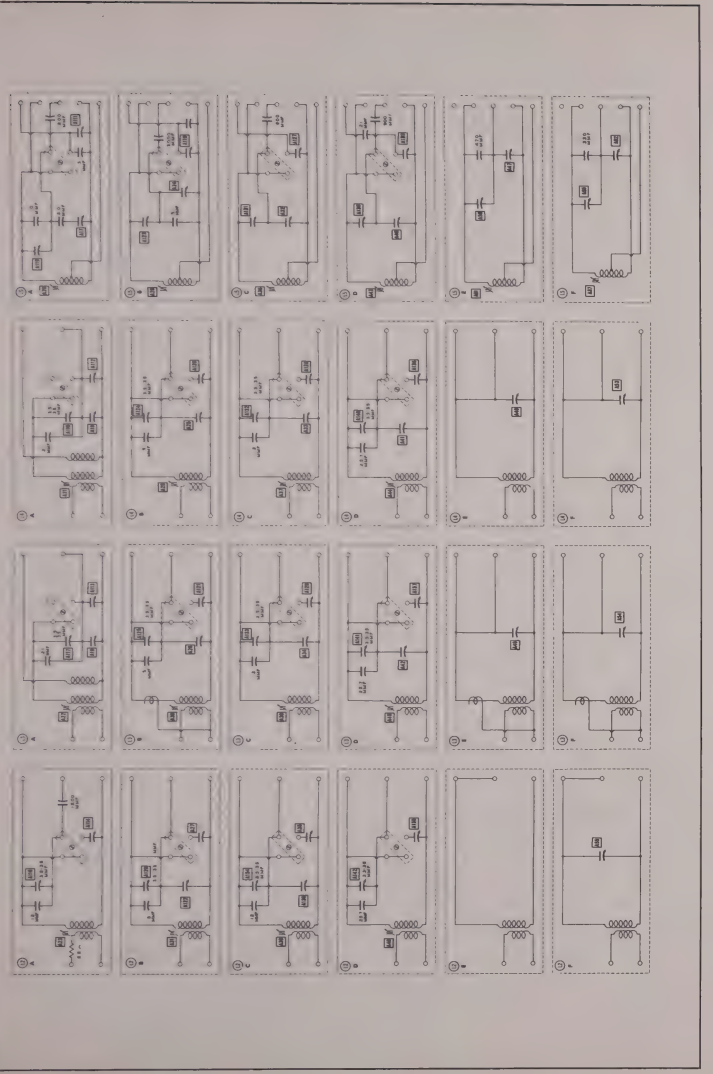
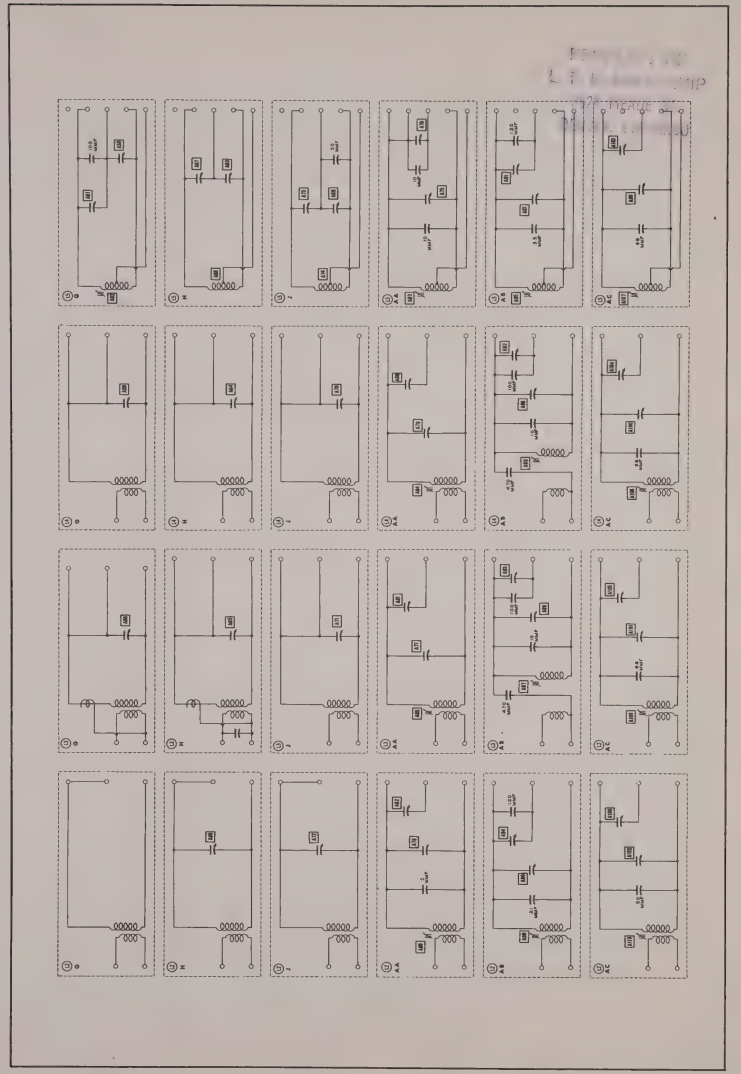
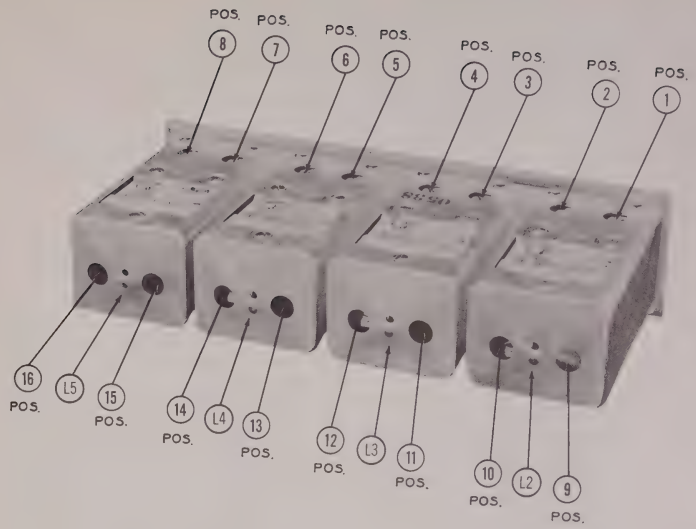
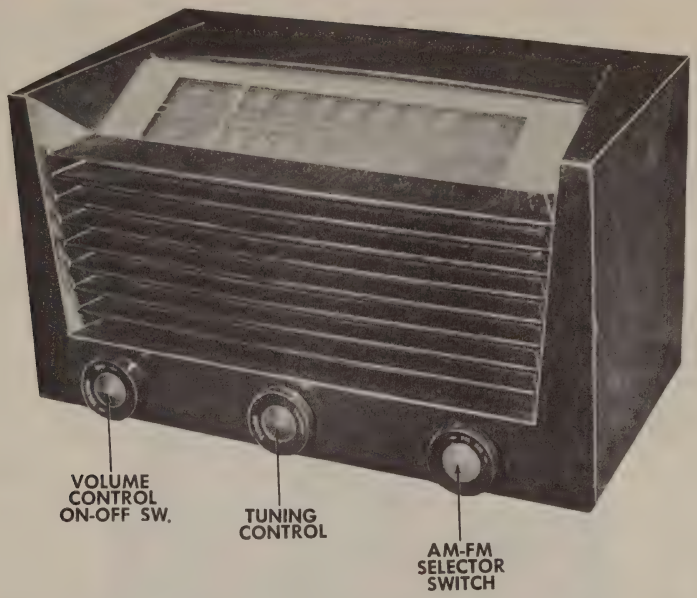
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.




POS. 8
POS. 7
POS. 6
POS. 5
POS. 4
POS. 3
POS. 2
POS. 1
16 POS.
L5
15 POS.
14 POS.
L4
13 POS.
12 POS.
L3
11 POS.
10 POS.
L2
9 POS.

PHILCO MODEL 52-944

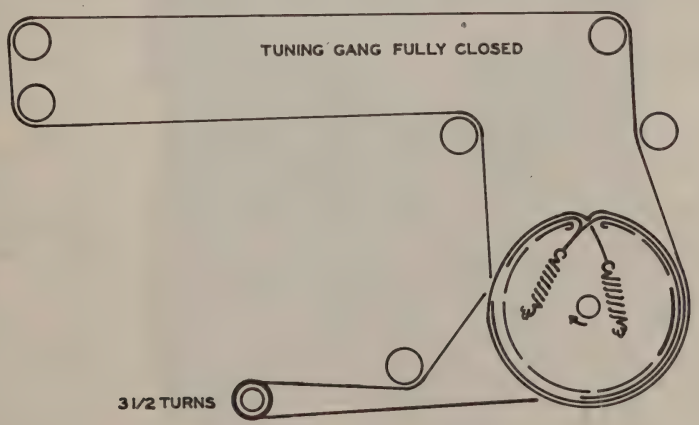
PROPERTY OF
L. F. [illegible]
3024 MORSE ST.
DENVER, COLORADO

PHILCO
MODEL 52-944



PHILCO
MODEL 52-944

TRADE NAME	Philco Model 52-944
MANUFACTURER	Philco Corp., Tioga and "C" Sts., Philadelphia, Pa.
TYPE SET	AC-DC Operated AM-FM Superheterodyne Receiver
TUBES (Six)	Types 12AU6 FM RF Amp., 12AT7 Conv., 12BA6 1st. IF Amp., 12AU6 2nd. IF Amp., 19V8 Ratio Det. -AM Det -AVC-AF Amp., 35C5 Audio Output
POWER SUPPLY	105-125 Volts AC/DC — RATING .330 Amp. @ 117 Volts AC
TUNING RANGE -BROADCAST	540 - 1620 KC — FREQ.MOD. 88-108MC



DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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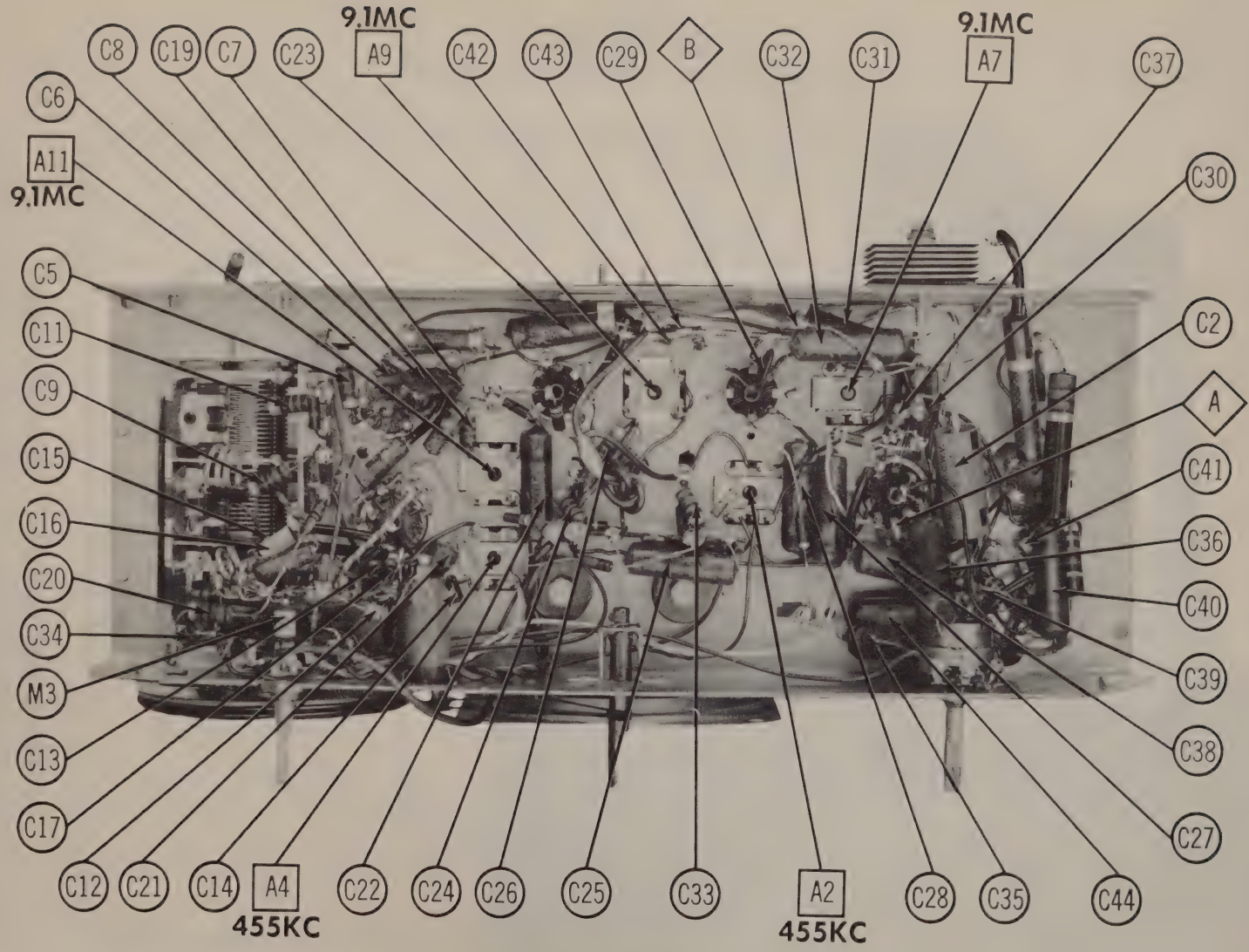
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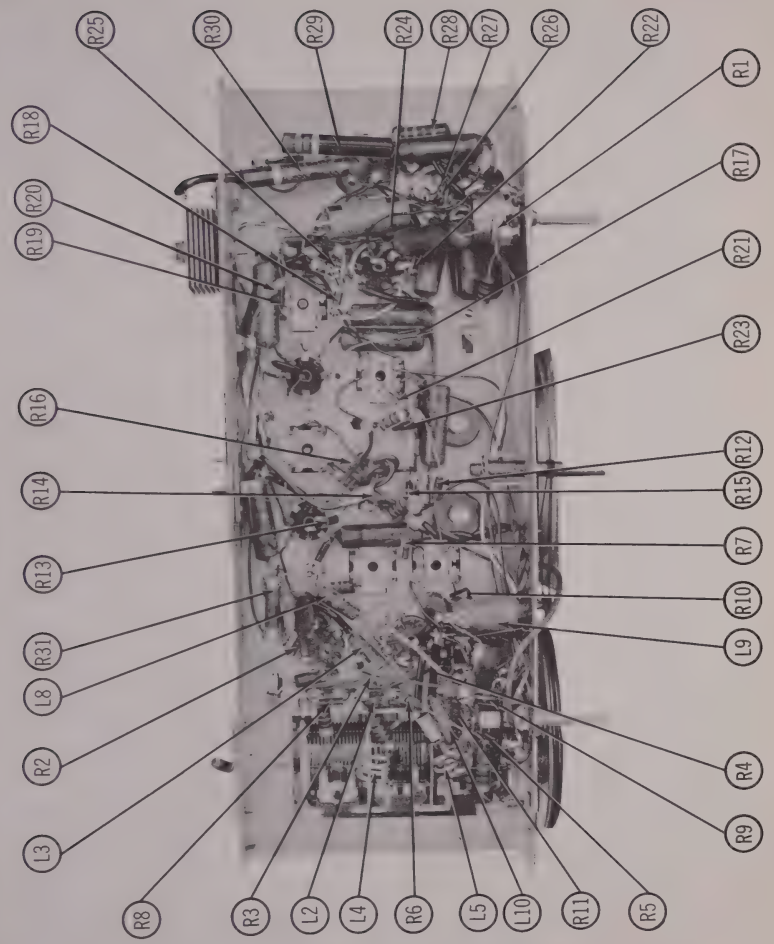

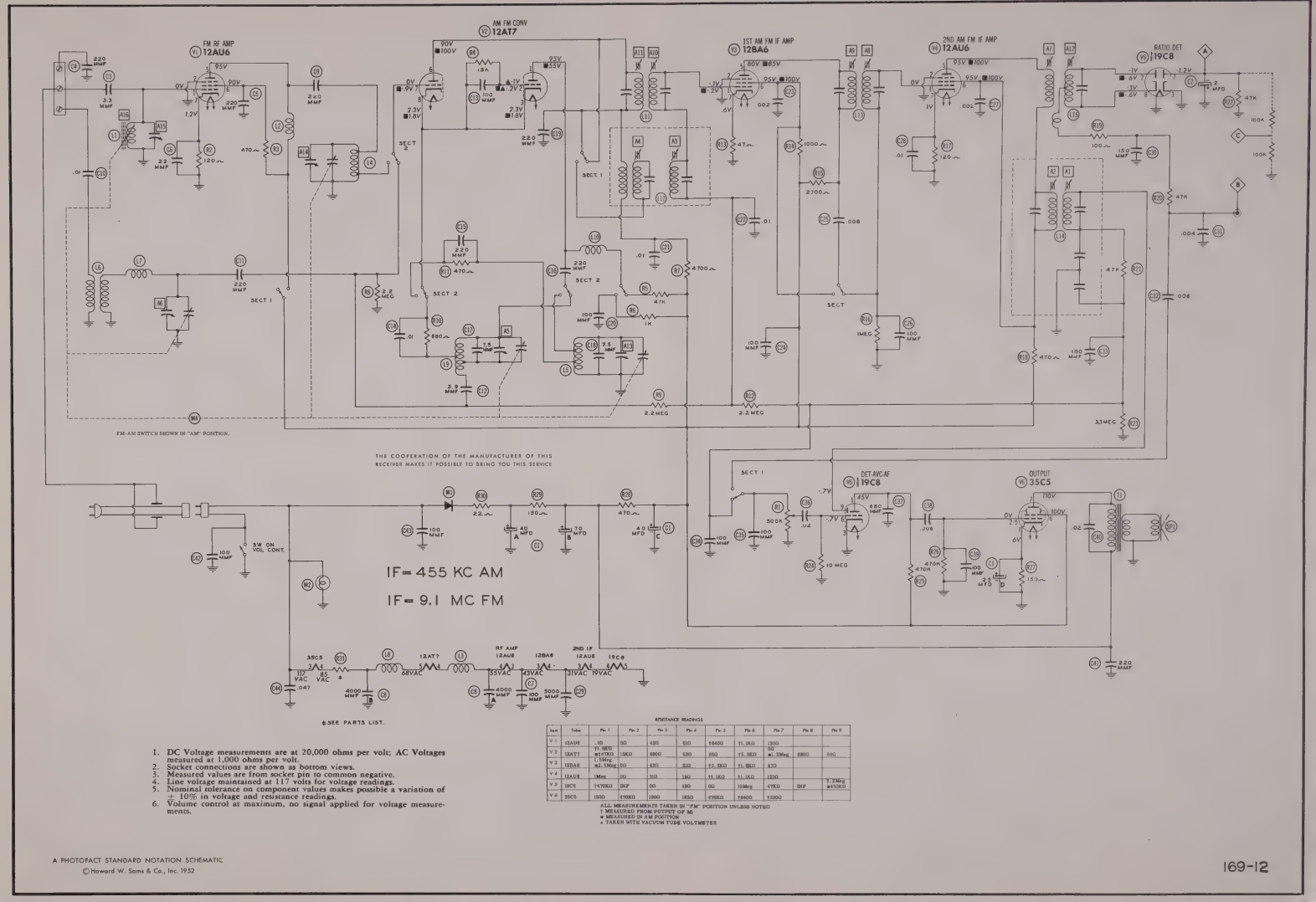
AM FM CONV
V2 12AT7
FM RF AMP
V1 12AU6
1ST AM FM IF AMP
V3 12BA6
2ND AM FM IF AMP
V4 12AU6
RATIO DET
V5 19C8
DET-AVC-AF
V5 19C8
OUTPUT
V6 35C5
FM-AM SWITCH SHOWN IN "AM" POSITION.
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
IF = 455 KC AM
IF = 9.1 MC FM
SW ON VOL. CONT.
SECT 1
SECT 2
SECT
RF AMP 12AU6
2ND IF 12AU6
12BA6
19C8
35C5
12AT7
3A4
3A5
3A6
117 VAC
85 VAC
.047
4000 MMF
68VAC
53VAC
43VAC
31VAC
19VAC
5000 MMF
100 MMF
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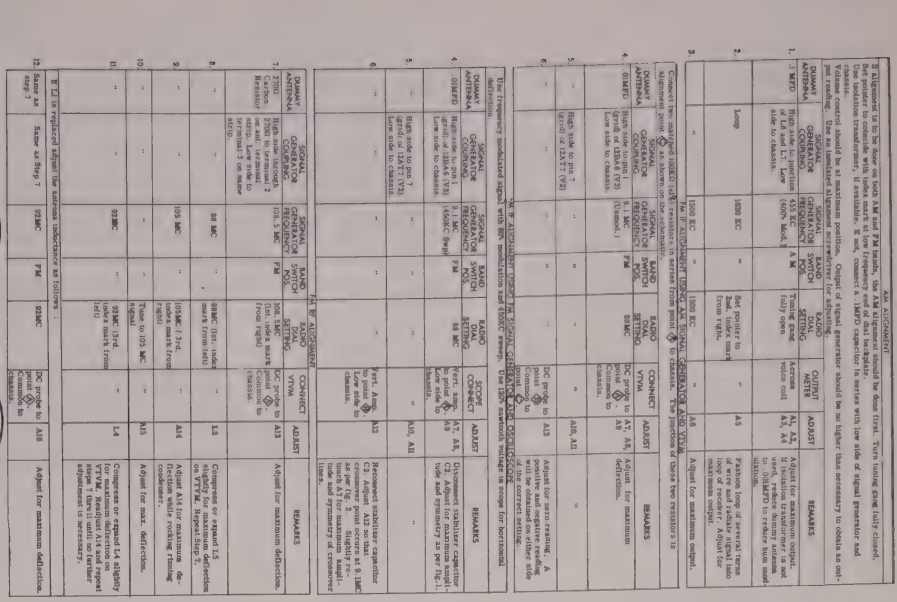
If alignment is to be done on both AM and FM bands, the AM alignment should be done first. Turn tuning gang fully closed. Set pointer to coincide with index mark at low frequency end of dial backplate. Output meter should be set at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use lowest sensitivity setting possible for adequate signal-to-noise ratio. Volume control should be at maximum position. Keep all leads short, especially at high frequencies.
AM ALIGNMENT
SIGNAL GENERATOR CONNECTION
SIGNAL GENERATOR OUTPUT
BAND SWITCH SETTING
RADIO DIAL SETTING
OUTPUT METER CONNECT
ADJUST
REMARKS
1. MTD
High side to junction of L2 and L7. Low side to chassis.
1500 KC
AM
Tuning gang fully open
Across voice coil
A5
A1, A2, A3, A4
Adjust for maximum output. If isolation transformer is not used, keep chassis from contacting metal objects.
2.
Loop
1500 KC
AM
Set pointer to 2nd index mark from right.
"
"
Fashion loop of several turns (one or two turns for high-gain receivers) and place close to set for adequate signal. Use lowest signal to obtain maximum output.
3.
"
1500 KC
"
"
"
"
"
Adjust for maximum output.
4. (6AE8)
High side to pin 1 (grid) of 12BA6 (V3). Low side to chassis.
1050 KC
FM
9.1 MC (Unmod.)
"
DC probe to pin 1 (grid) of 12AT7 (V2). Common to chassis.
A7
A6, A7
Adjust for zero reading. A reasonably sharp reading will be obtained on either side of zero; use setting midway between.
5.
High side to pin 1 (grid) of 12AT7 (V2). Low side to chassis.
105 MC
FM
105 MC (3rd harmonic)
105 MC
"
"
"
6.
"
"
"
"
"

PHOTOFACT* Folder

RCA VICTOR MODELS 17T150, 17T151, 17T163, (Ch. KCS66C), 17T172K, 17T173K, 17T174K (Ch. KCS66D)

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MODEL 17T151

RCA VICTOR MODELS 17T150, 17T151, 17T163, (Ch. KCS66C), 17T172K, 17T173K, 17T174K (Ch. KCS66D)

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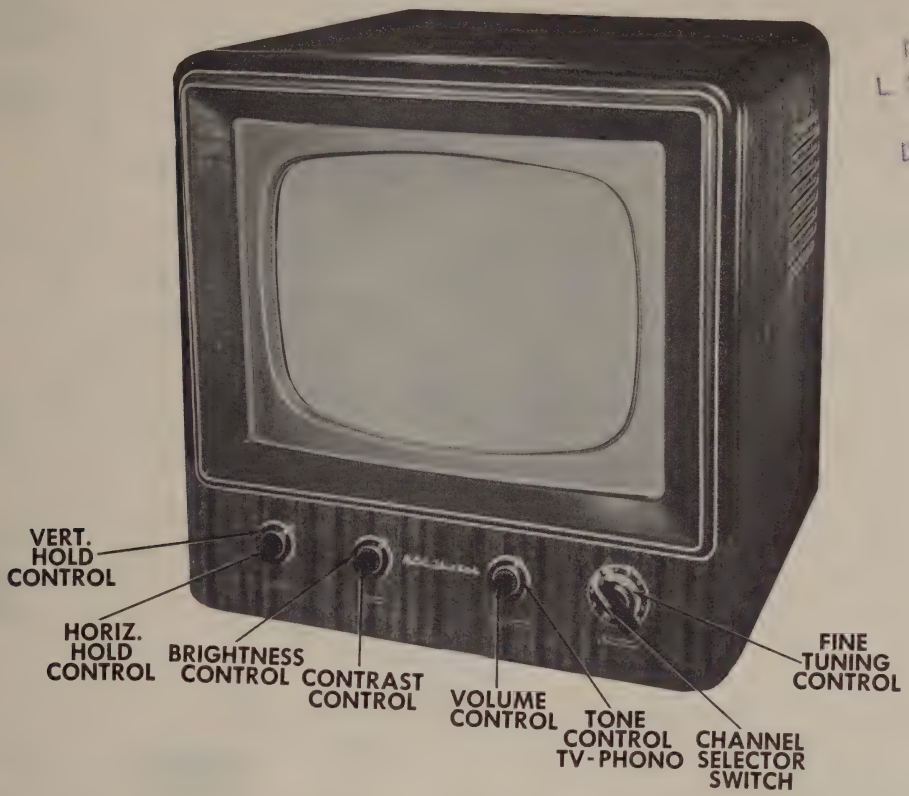

RCA Victor 17T151

TRADE NAME	RCA Victor Models 17T150, 17T151, 17T163, (Ch. KCS66C), 17T172K, 17T173K, 17T174K (Ch. KCS66D)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, N. J.
TYPE SET	Television Receiver
TUBES	Twenty Two
POWER SUPPLY	110-120 Volts AC - 60 Cycles RATING 1.8 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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RCA VICTOR MODELS 17T150, 17T151, 17T163, (Ch. KCS66C), 17T172K, 17T173K, 17T174K (Ch. KCS66D)

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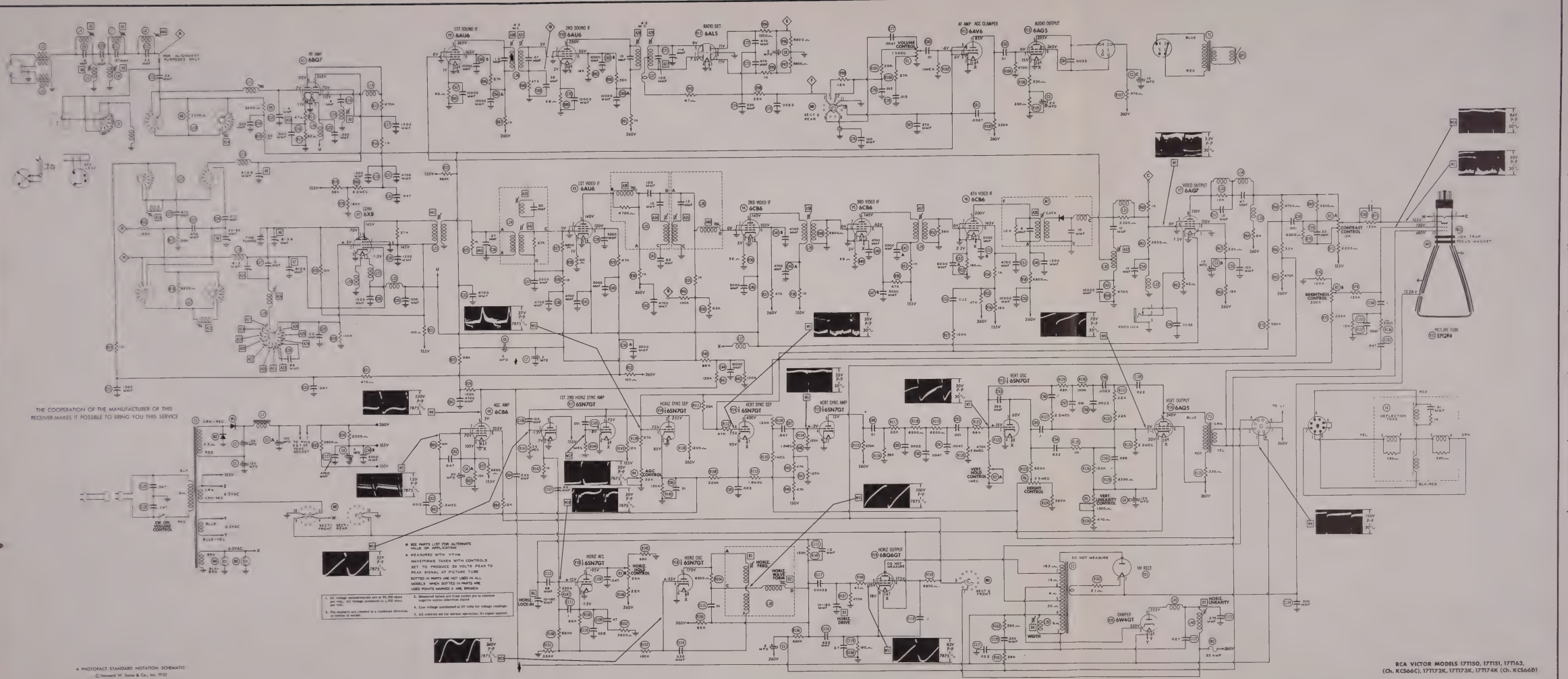
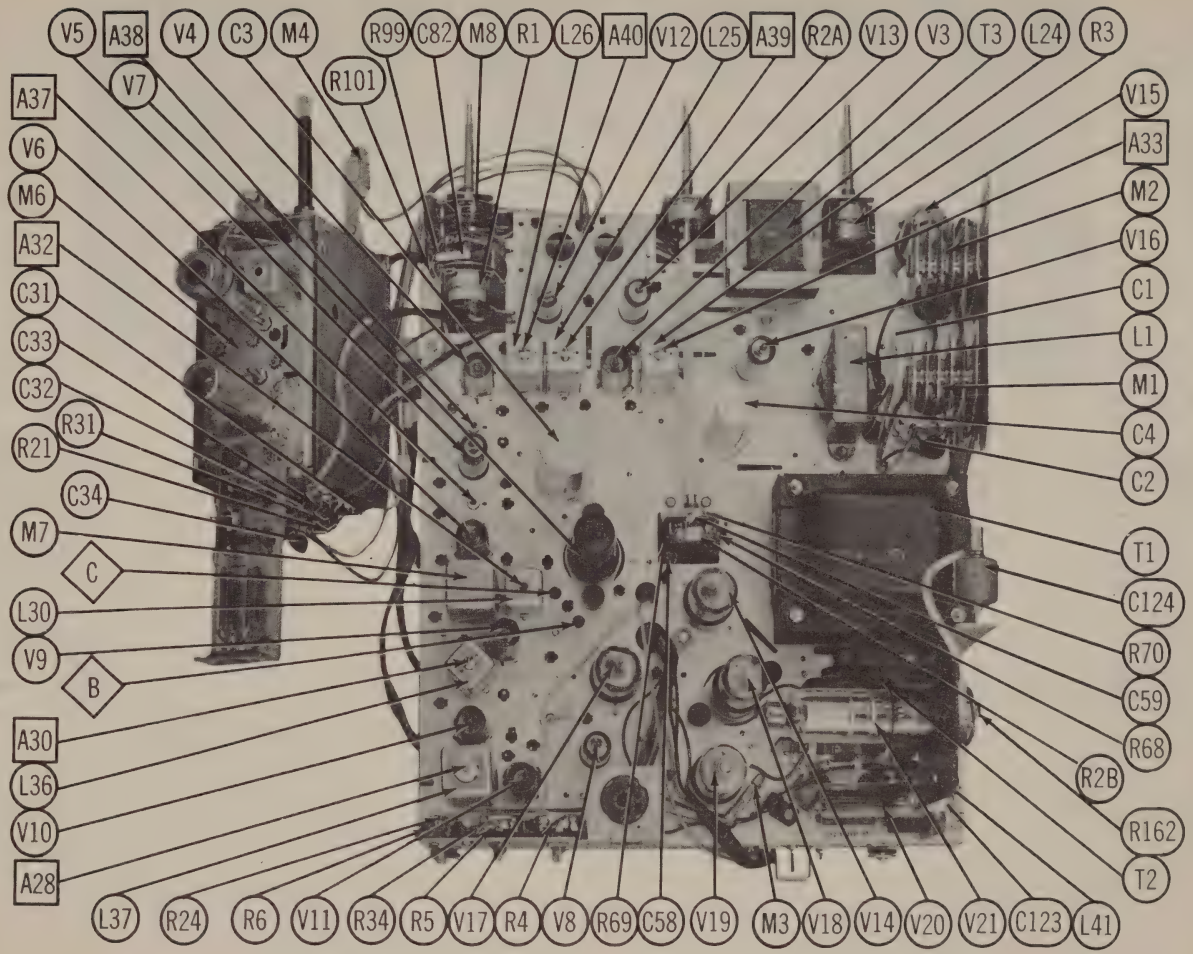

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
RCA VICTOR MODELS 17T150, 17T151, 17T163, (Ch. KCS66C), 17T172K, 17T173K, 17T174K (Ch. KCS66D)
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1952



CHASSIS TOP VIEW

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ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard can be eliminated by removing the horizontal oscillator tube (V18) from its socket.

ANTENNA MATCHING UNIT ALIGNMENT

The antenna matching unit is accurately aligned at the factory. Adjustment of this unit should not be attempted in the field, since misalignment may cause considerable loss of signal on channel 3.
Disconnect the lead from the FM trap (L8) to the channel switch wafer, connect Point A through a .001MFD capacitor to pin 1 (grid) of 6CB6 (V4). Replace the cover on the matching unit while making all adjustments.
Remove the 1st. Video IF tube (V3). Connect a 1000Ω potentiometer across the terminals of a 7.5 volt battery capable of withstanding appreciable current drain. Connect the positive lead of the battery to chassis and the potentiometer arm to the ungrounded side of R39. Adjust the potentiometer to produce approximately -6 volts at Point A with respect to chassis.
Connect the synchronised sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Two 130Ω carbon resistors	Across antenna input terminals with 130Ω in each lead.	Not used	45.75MC (400% mod.)	Any	Vert. amp. input to Point D. Low side to chassis.	A1	Set oscilloscope gain at maximum and adjust A1 for MINIMUM 400% response on scope.
2. "	"	"	41.25MC (400% mod.)	"	"	A2	Adjust for MINIMUM 400% response on scope.
3. "	"	50MC (10MC swp.)	50MC 52MC 53MC	"	Vert. amp. thru crystal probe (Fig. 1) to Point A. Low side to chassis.	A3, A4	Remove the .001MFD capacitor (see instructions above) from Point A and connect a 300Ω Resistor from A to chassis, using short leads. Adjust A3 & A4 to obtain response curve as per Fig. 2. Repeat steps 1, 2 and 3 until no further improvement is made. Remove the 300Ω Resistor and the crystal probe. Restore the connection between L8 and the channel switch. Replace V3.

RF & OSCILLATOR ALIGNMENT

An RF unit which is operative and requires only minor touch up adjustments, will require no pre-setting of adjustments. Where complete alignment is necessary make the following pre-adjustments.
Set A10 so that the screw head projects approximately 3/8 inch above the chassis. Turn the slug of L33 fully counter clockwise. Adjust the trimmer, A9, to fully closed, then open one quarter turn. Disconnect the link from terminals A and B of L24 and terminate the link with a 39 ohm resistor. To insure zero AGC bias during RF unit alignment connect the ungrounded side of C32 to chassis. Set the fine tuning control 30 degrees clockwise from the center of its mechanical range.
During Step 4 the sweep generator connection is made as follows: Remove V1 from its socket and twist one end of a small piece of wire around pin 7. Replace V1 and connect the sweep generator to the free end of the wire through a .0015MFD capacitor.
Connect the synchronised sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4. .0015MFD	High side to Pin 7 (grid) of 6BQ7 (V1). Low side to chassis.	Not used	43.5MC (400% mod.)	2	Vert. Amp. to Point D. Low side to chassis.	A5	Adjust A5 for MINIMUM 400% indication on scope.
5.	High side to small piece of insulated wire inserted in hole in tuner unit. Low side to chassis	"	227MC	8	"	A6	Adjust A6 to obtain audio frequency beat indication on scope.
6. Two 130Ω carbon resistors	Across antenna input terminals with 130Ω in each lead.	183MC (10MC swp.)	181.25MC 185.75MC	"	"	A7, A8 A9, A10	Adjust A7, A8, A9 & A10 for response curve as per Fig. 3.
7. "	"	Not used	129MC	6	"	A11	Adjust to obtain audio frequency beat indication on scope.
8. "	"	85MC (10MC swp.)	83.25MC 87.75MC	"	"	A12, A13 A14	Adjust for response curve as per Fig. 3.
9. Connect DC probe of VTVM to Point C common to chassis and adjust A15 for -3.5 volts, or for maximum if less than -3.5 volts.							
10. Repeat Step 8, readjusting A12, A13 and A14 if necessary for proper response curve.							
11. Repeat steps 5 and 6, adjusting only if necessary to obtain correct oscillator frequency and proper response curve. If necessary to readjust A7, the voltage at Point C should again be checked for channel 6, as in Step 9.							
12. Two 130Ω carbon resistors	Across antenna terminals with 130Ω in each lead.	Not used	257MC	13	Vert. amp. to Point D. Low side to chassis.	A16	Adjust to obtain audio frequency beat indication on scope. Overshoot the adjustment then adjust A6 to again obtain beat.
13. Check the response of channels 7 through 13 for response similar to Fig. 3 with markers above 80%, also check voltage at Point C. If markers fall below 80% on any channel, switch to channel 8 and make compromise adjustment of A7, A8, A9 and A10.							
14. Two 130Ω carbon resistors	Across antenna input terminals with 130Ω in each lead.	Not used	227MC	8	Vert. Amp. to Point D. Low side to chassis.		Check audio frequency beat indication on scope. If necessary adjust A6. Overshoot theadjustment, then readjust A16 to obtain beat.
15. "	"	"	129MC	6	"	A11	Adjust for audio frequency beat indication on scope.
16. "	"	85MC (10MC swp.)	83.25MC 87.75MC	"	"		Check for response curve similar to Fig.3. If necessary, readjust A12, A13 and A14.
17. Check all channels for proper response curve and oscillator injection voltage (-3.5 volts at Point C). Excessive tilt in the same direction on channels 2, 3, and 4 may be corrected by adjusting A10 on channel 3. Overshoot the adjustment and compensate for it by readjusting A14							
18. Two 130Ω carbon resistors	Across antenna input terminals with 130Ω in each lead.	Not used	257MC 251MC 245MC 239MC 233MC 227MC 221MC 129MC 123MC 115MC 107MC 101MC	13 12 11 10 9 8 7 6 5 4 3 2	Vert. amp. to Point D. Low side to chassis.	A6 A17 A18 A19 A20 A21 A22 A11 A23 A24 A25 A26	If necessary adjust for audio frequency beat indication on scope.
Remove the 39Ω Resistor from the link and reconnect the link to terminals A and B on L24.							

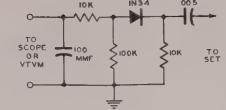


FIG.1

FIG.2

FIG.3

FIG.4

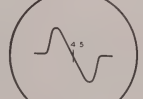
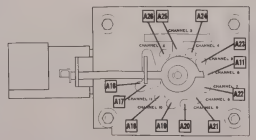


FIG.5



OSCILLATOR ALIGNMENT POINTS

ALIGNMENT INSTRUCTIONS (CONT.)

PROPER BLANKING!!

RATIO DETECTOR ALIGNMENT

Connect an oscilloscope across the speaker voice coil and set the volume control for maximum output.
Turn trimmer A27 all the way out.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
19. Direct	High side to pin 1 (grid) of 6AU6 (V10). Low side to chassis.	4.5MC	Any channel not used locally	DC probe to point C. Common to chassis.	A28	Adjust for maximum deflection. Attenuate generator to maintain meter deflection at 10 volts..
20. "	"	"	"	"	A29	Adjust for MINIMUM 400% indication on scope. Repeat adjustment of A28 and A29.
21. "	"	"	"	DC probe to point F. Common to chassis.		Check voltage obtained at point F. If it exceeds ± 1.5 volts adjust A27 for zero reading. Readjust A29 for MINIMUM indication on scope . Repeat adjustment of A27 and A29 until voltage at point F is less than 1.5 volts while scope indication is MINIMUM.
22. Repeat steps 19 and 21 for the following simultaneous conditions: 1. Maximum DC at Point E . 2. Less than ± 1.5 volts at Point F . 3. Minimum 400% indication on scope.						

SOUND IF ALIGNMENT

Connect the synchronised sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
23. Direct	High side to pin 1 (grid) of 6AU6 (V9). Low side to chassis.	4.5MC (1MC Swp)	4.5MC	Any channel not used locally	Vert. amp. thru 10KΩ resistor to point D. Low side to chassis	A30, A31	Adjust for maximum gain and symmetry as per fig. 4. Attenuate sweep generator output to maintain approximately 3 volts at point D. Connect the scope to point D and check for linearity of response as per Fig. 5.
24. Direct	High side to poin C. Low side to chassis.	Not used	4.5MC	"	Use VTVM. Crystal diode probe (fig. 1) to pin 8 (plate) of 6AQ7 (V7). Common to chassis.	A32	Signal input from generator should be approximately .5 Volts. Short pin 1 of V6 to chassis to reduce possibility of error due to noise. Adjust A32 for MINIMUM deflection on meter Remove short from pin 1, V6.

VIDEO IF ALIGNMENT

Connect the bias supply as in Antenna Matching Unit Alignment.
Connect the synchronised sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
25. .001MFD	High side to terminal 'A' of L24. Low side to chassis.	Not used	39.25MC (unmod.)	Any not used locally	Use VTVM. DC probe to Point C. Common to chassis.	A33	Adjust bias potentiometer for -1 volt at Point C. Adjust A33 for MINIMUM deflection. Attenuate signal gen. to maintain 1 volt reading on meter.
26. "	"	"	41.25MC	"	"	A34	Adjust for MINIMUM deflection.
27. "	"	"	47.25MC	"	"	A35	Adjust for MINIMUM deflection
28. "	"	"	43.7MC	"	"	A36	Adjust for maximum deflection
29. "	"	"	45.5MC	"	"	A37	Adjust for maximum deflection
30. "	"	"	41.8MC	"	"	A38	Adjust for maximum deflection
31. "	High side to Pin 1, (grid) of 6AU6 (V3), Low side to chassis.	43MC (10MC swp.)	42.25MC 45.75MC 46.5MC	"	Vert. amp. to Point C. Low side to chassis.	A39, A40	Connect 330Ω resistors across R48, R52 and and across terminals A and F of M7. Adjust A39 and A40 for maximum gain and curve shape as per Fig. 6. Attenuate generator input to maintain .5 volts peak to peak in scope.
32. Direct	High side to Point C using very short leads. Low side to chassis.	69MC (10MC swp)	41.25MC 41.9MC 44.5MC 45.75MC	4	Vert. amp. thru crystal diode probe to terminal "B" of L25. Low side to chassis.	A41, A42 A43	Connect a 180Ω resistor from terminal "B" of L25 to the junction of R30 and C42. Preset A43 to minimum capacity. Adjust A41 & A42 for maximumgain at 43.5MC and with 45.75MC at 70% of maximum response. Adjust A43 until 41.25MC is at 85%, as in Fig. 7. In receivers which have A43 fixed, adjust A41 and A42 for max. gain and response as per Fig. 7. Disconnect the diode probe, the 180Ω resistor and the three 330Ω resistors.
33. "	"	"	42.25MC 42.5MC 43MC 45.75MC 46.5MC	4	Vert. amp. to Point C. Low side to chassis.		Adjust the bias potentiometer to obtain -6 volts at Point C. Adjust the sweep generator to obtain 3 volts peak to peak on the scope. Retouch A31 and A37 for response as per Fig. 8. Do not adjust A38 unless absolutely necessary.

FM TRAP ADJUSTMENT

The FM trap is provided for the purpose of reducing possible interference from FM stations. To adjust, tune in the channel affected by the offending signal and adjust A44 for minimum interference.

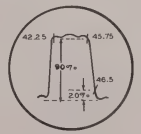


FIG.6

FIG.7

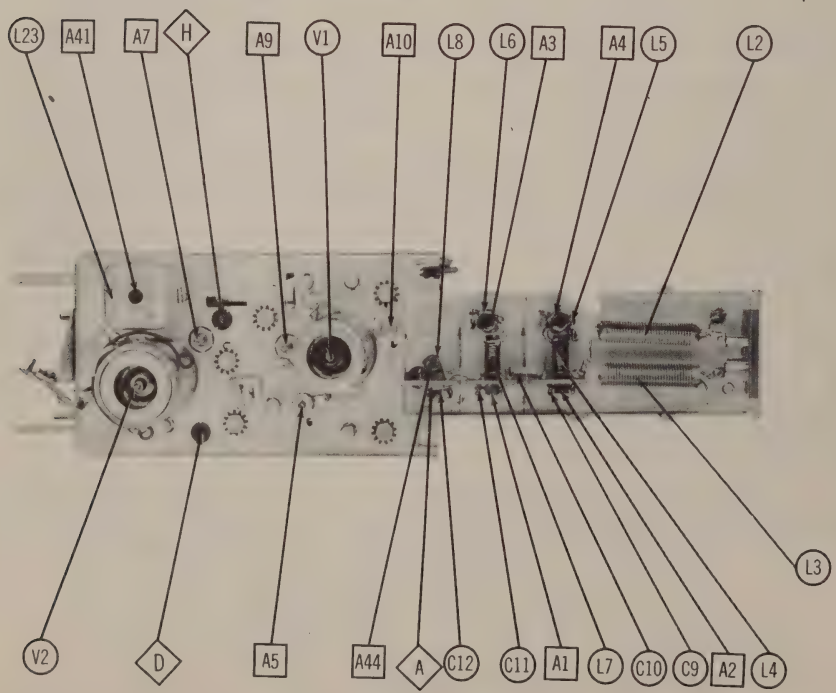
FIG.8

RCA VICTOR MODELS 17T150, 17T151, 17T163, (Ch. KCS66C), 17T172K, 17T173K, 17T174K (Ch. KCS66D)

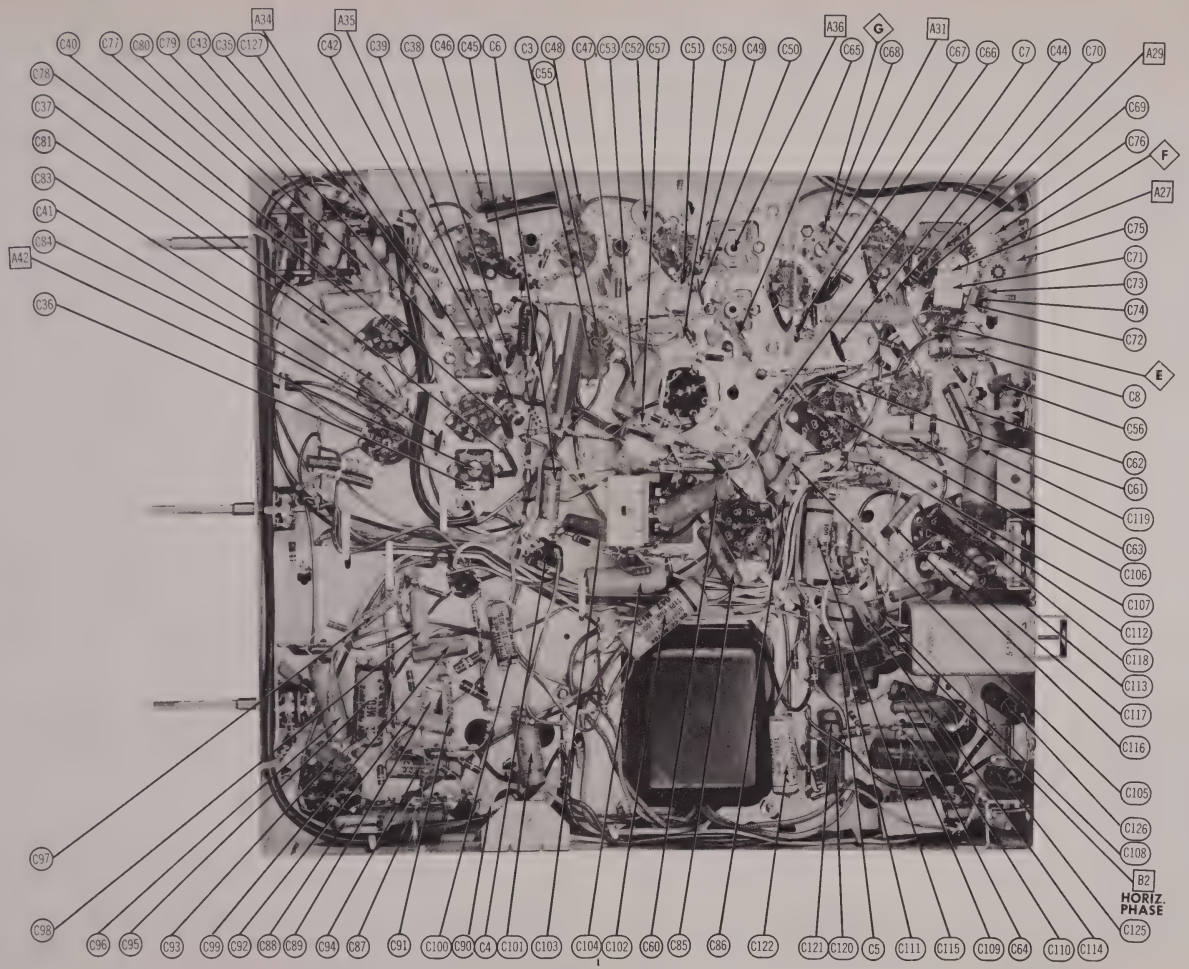
RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BQ7	†1.6KΩ	8.2Meg	8.6Meg	0Ω	.1Ω	8.6Meg	200KΩ	130Ω	0Ω
V 2	6X8	0Ω	100KΩ	†12KΩ	0Ω	.1Ω	0Ω	100KΩ	†2.6KΩ	†2.6KΩ
V 3	6AU6	60KΩ	0Ω	0Ω	.1Ω	†6.6KΩ	†47KΩ	100Ω		
V 4	6CB6	60KΩ	56Ω	0Ω	.1Ω	†6.6KΩ	†47KΩ	0Ω		
V 5	6CB6	.2Ω	68Ω	.1Ω	0Ω	†3.5KΩ	†49KΩ	0Ω		
V 6	6CB6	.2Ω	180Ω	.1Ω	0Ω	†6.8KΩ	†15KΩ	0Ω		
V 7	6AG7	0Ω	0Ω	0Ω	3.9KΩ	43Ω	†18KΩ	.1Ω	†6KΩ	
V 8	6CB6	1.1Meg	†7KΩ	.1Ω	0Ω	170KΩ	†12KΩ	†7KΩ		
V 9	6AU6	470KΩ	0Ω	0Ω	.1Ω	†1KΩ	†28KΩ	82Ω		
V 10	6AU6	47KΩ	0Ω	0Ω	.1Ω	†1KΩ	14KΩ	68Ω		
V 11	6AL5	7.8KΩ	8KΩ	.1Ω	0Ω	INF	0Ω	INF		
V 12	6AV6	10Meg	0Ω	0Ω	.1Ω	200KΩ	200KΩ	†330KΩ		
V 13	6AQ5	470KΩ	660Ω	0Ω	.1Ω	†900Ω	†510KΩ	470KΩ		
V 14	6SN7GT	25KΩ	†1.2KΩ	150KΩ	80KΩ	#1.2Meg	290KΩ	.1Ω	0Ω	
V 15	6SN7GT	725KΩ	#1.8Meg	0Ω	120KΩ	†270KΩ	0Ω	0Ω	.1Ω	
V 16	6AQ5	2.2Meg	900Ω	0Ω	.1Ω	†920Ω	†39Ω	2.2Meg		
V 17	6SN7GT	3.9Meg	†2.5KΩ	1KΩ	1Meg	†14KΩ	0Ω	0Ω	.1Ω	
V 18	6SN7GT	1.5Meg	†26KΩ	410KΩ	480KΩ	†82KΩ	0Ω	0Ω	.1Ω	
V 19	6BQ6GT	INF	0Ω	INF	†6.8KΩ	470KΩ	INF	.1Ω	180Ω	TOP CAP #15Ω
V 20	6W4GT	INF	INF	470KΩ	INF	†70Ω	INF	#18Ω	#18Ω	
V 21	1B3GT	PINS 1 THRU 8 HAVE INF RESISTANCE								TOP CAP #178Ω
V 22	17QP4	■.5Ω	280KΩ	PIN 10 #56KΩ	PIN 11 150KΩ	PIN 12 ■0Ω				

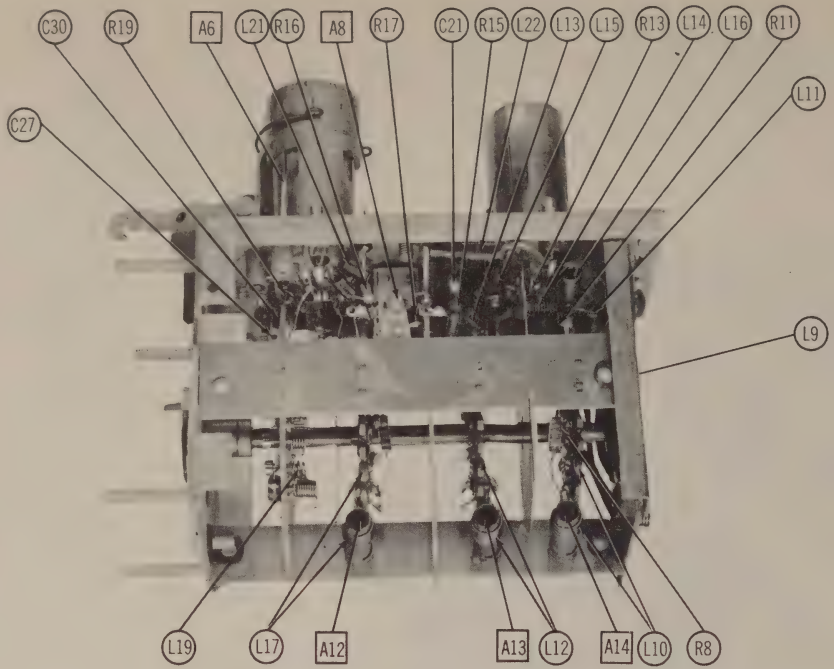
ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
† MEASURED FROM OUTPUT M1
# MEASURED FROM PIN 3 OF V20
■ MEASURED FROM 155 VDC LINE



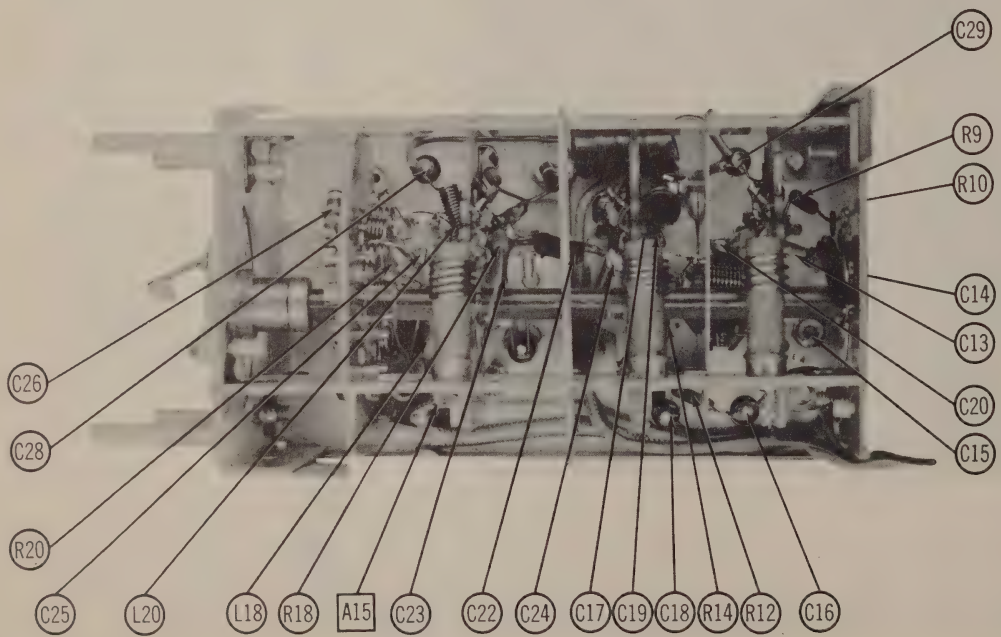
RF TUNER-TOP VIEW



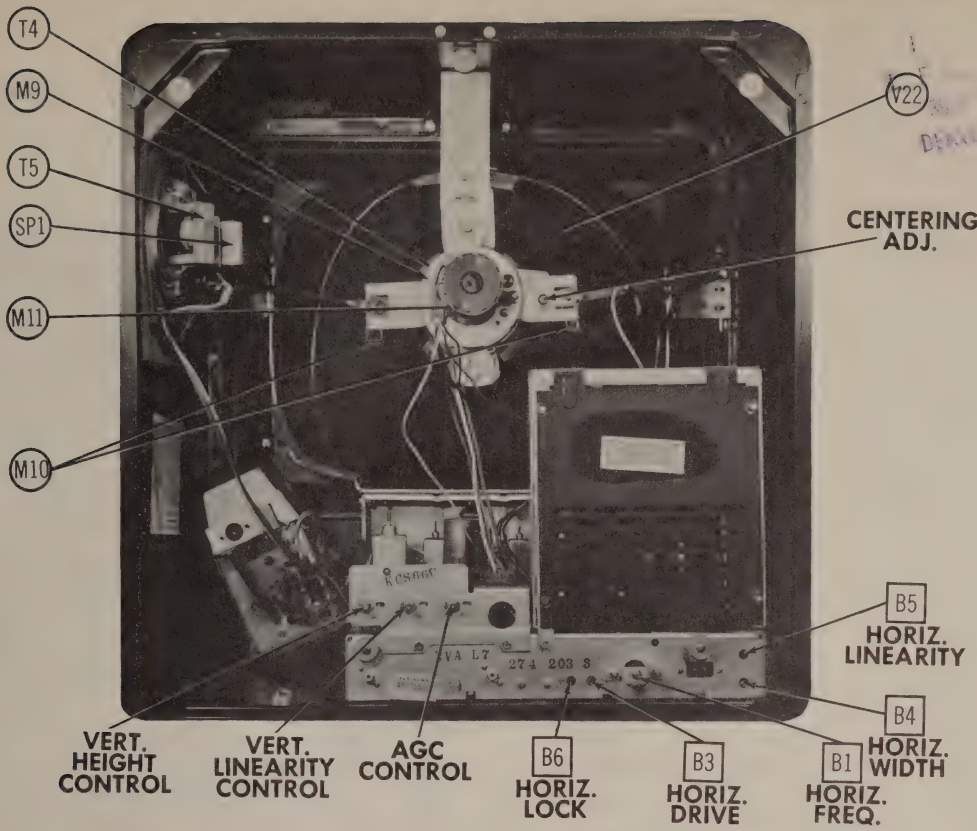
CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

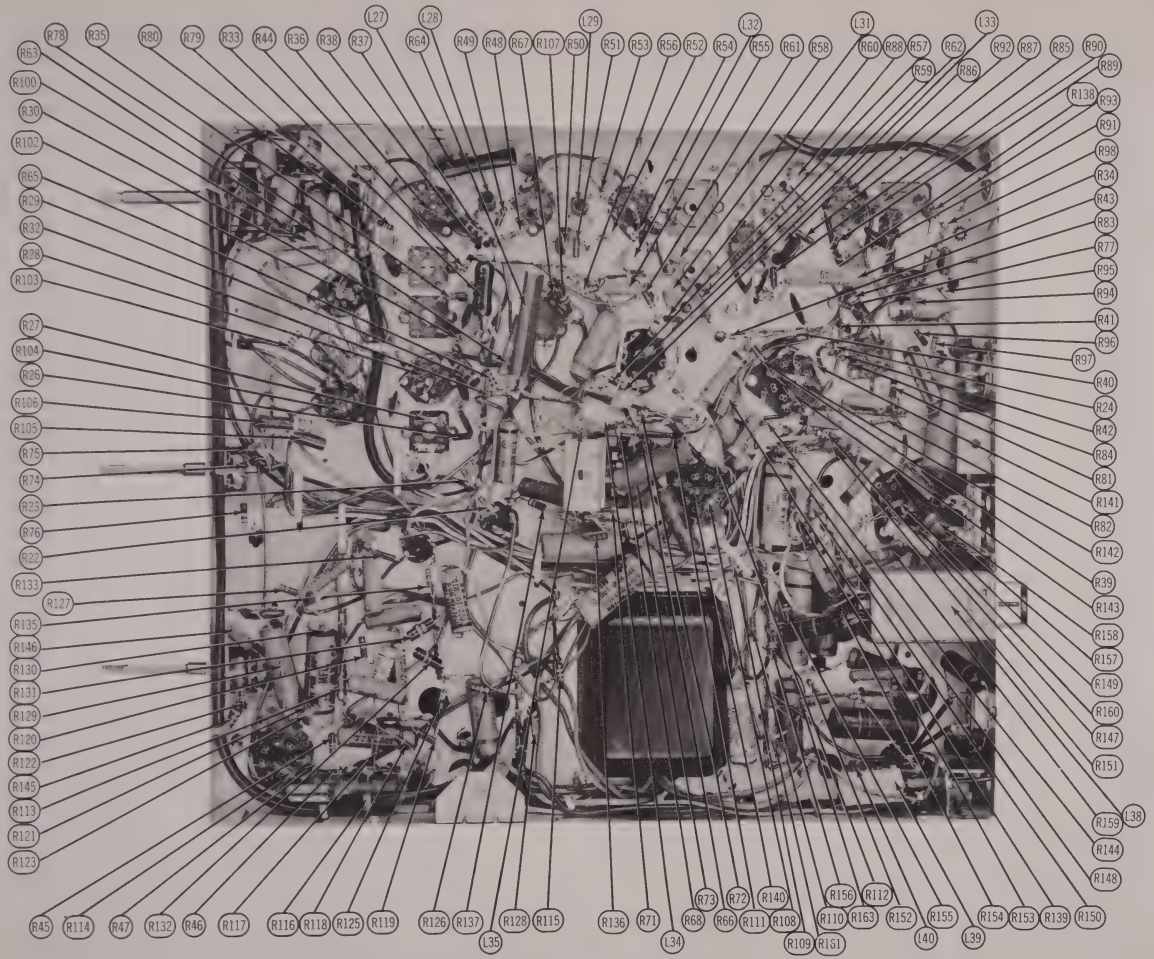


CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

1. Remove 8 Push on Type Control Knobs from front Panel.
2. Remove 5 Metal Screws. Remove back cover.
3. Disconnect Speaker, deflection yoke plug, and picture tube socket.
4. Remove 4 nuts holding Speaker. Remove Speaker.
5. Disconnect HV lead from HV cage.
6. Remove 5 Chassis bolts. Remove Chassis.

NOTE: For Picture Tube Removal it is necessary to remove Chassis as outlined above.



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

PROPERTY OF
LT. F. BLANKENSHIP
3928 MAPLE ST.
DENVER, COLORADO

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BQ7	6BQ7	9AJ	
V2	Converter	6X8	6X8	9AK	
V3	1st. Video IF Amp.	6AU6	6AU6	7BK	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CH	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CH	
V6	4th. Video IF Amp.	6CB6	6CB6	7CH	
V7	Video Output	6AG7	6AG7	8Y	
V8	AGC Amplifier	6AU6	6AU6	7BK	
V9	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V10	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V11	Ratio Detector	6AL5	6AL5	6BT	
V12	AF Amplifier – AGC Clamper	6AV6	6AV6	7BT	
V13	Audio Output	6AQ5	6AQ5	7BZ	
V14	Horiz. Sync. Sep.-Vert. Sync. Sep.	6SN7GT	6SN7GT	8BD	
V15	Vert. Sync. Amp.-Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V16	Vert. Output	6AQ5	6AQ5	7BZ	
V17	Horiz. Sync. Amp.	6SN7GT	6SN7GT	8BD	
V18	Horiz. AFC – Horiz. Oscillator	6SN7GT	6SN7GT	8BD	
V19	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V20	Damper	6W4GT	6W4GT	4CG	
V21	HV Rectifier	1B3GT	1B3GT	3C	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: SYLVANIA PART No.		RTMA BASE TYPE	NOTES
V22A	17QP4			12D	
		17LP4		12C	Make Circuit Changes
V22B	17CP4	17CP4		12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	150	200	75220	AFH2-35		UPE15020		TVL-1540	Voltage Doubler
C2	150	200	75220	AFH2-35		UPE15020		TVL-1540	Voltage Doubler
C3A	100	350	76451	AFH4-05		UPT419		TVL-4680	● Filter
B	10	350		PRS50/25				TVA-1306	■ Video Output Screen
C	10	350							▲ Audio Output Dec.
D	20	50							Audio Output Cathode
C4A	20	350	75218	AFH3-112		UPT316		TVL-3638	■ AGC Cathode †
B	5	350							▲ Decoupling
C	150	50							Vert. Output Cathode
C5	5	450	28417	PRS450/4		BR445		TVA-1702	Decoupling
C6	2	10	76742	PRS150/4		BBR-2-50T		TVA-1201	AGC Filter
C7	2	10	76742	PRS150/4		BBR-2-50T		TVA-1201	AGC Filter
C8	5	50	74521	PRS150/4		BR550		TVA-1303	Stabilizing Cap.
C9	18		54207		TCZ-18		NP0K-180		Fixed Trimmer
C10	5		93056	SI5			GP1K-050		RF Coupling
C11	27		70835		TCZ-27		NP0K-270		Fixed Trimmer
C12	33		76739		TCN-33		N750K-330	5TCU-Q33	Fixed Trimmer
C13	22		76557		TCZ-22		NP0K-220	5TCC-Q22	RF Coupling
C14	1500		73748	BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	AGC Filter
C15	1-4		76532		829-4				Variable Trimmer
C16	1500		75166	SII500	D6-152	TM5D15	GP2L-152	501C1	RF Amp. Cathode
C17	1500		73748	BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	RF Bypass
C18	1500		75166	SII500	D6-152	TM5D15	GP2L-152	501C1	RF Bypass
C19	8		70597				NP0K-080		Fixed Trimmer
C20	1500		73748	BPD-0015	DD-152	TM5D15	801-0015	5HK-D15	RF Amp. Fil. Bypass
C21	1500		75166	SII500	D6-152	TM5D15	GP2L-152	501C1	RF Bypass
C22	270		75199	SI270	D6-271		GP2K-271	5GA-T27	RF Coupling
C23	470		75198	SI470	D6-471		GP2K-471	5GA-T47	RF Coupling
C24	270		75199	SI270	D6-271		GP2K-271	5GA-T27	RF Coupling
C25	22		76558	SI22N080			N080-331-220		Osc. Grid Cap.
C26	.68		71088		TCZ-.68		NP0K-R68		Fixed Trimmer
C27	10		55326	SII0N080			N080-331-100		Osc. Feedback
C28	1500		75166	SII500	D6-152	TM5D15	GP2L-152	501C1	Conv. Fil. Bypass
C29	1500		75166	SII500	D6-152	TM5D15	GP2L-152	501C1	Fil. Bypass
C30	1500		75610	SII500	D6-152	TM5D15	GP2L-152	5HK-D15	RF Bypass
C31	4700		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D47	RF Bypass
C32	4700		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D47	AGC Filter
C33	.047	600	73592	P688-047	DF-503	PTE6S47		6TM-S47	RF Bypass
C34A	5000		76470	BPD-005	DD-2-502	TM5D5	811-005	5HK-2D47	RF Bypass
B	5000			BPD-005		TM5D5	811-005		RF Bypass
C35	.047	400	73553	P488-047	DF-503	PTE4S47		4TM-S47	RF Bypass
C36	27				TCZ-27		NP0K-270		Fixed Trimmer †
C37	5000		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D5	AGC Filter
C38	4700		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D47	AGC Filter
C39	5000		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D5	1st. Video IF Screen
C40	5000		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D5	RF Bypass
C41	4700		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D47	1st. Video IF Fil. Bypass
C42	4700		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D47	RF Bypass
C43	82		71514	SI82			GP1K-820		Fixed Padder
C44	10000		73960	BPD-01	DD-103	TM5S1	821-01	5HK-S1	AGC Filter
C45A	4700		76470	BPD-005	DD-2-502	TM5D5	811-005	5HK-2D47	2nd. Video IF Plate
B	4700			BPD-005		TM5D5	811-005		2nd. Video IF Screen
C46	5000		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D5	2nd. Video IF Fil.
C47A	5000		76470	BPD-005	DD-2-502	TM5D5	811-005	5HK-2D47	3rd. Video IF Plate
B	5000			BPD-005		TM5D5	811-005		3rd. Video IF Screen
C48	4700		73473	BPD-005	DD-502 2	TM5D5	811-005	5HK-D47	3rd. Video IF Fil.
C49	1500		75166	SII500	D6-152	TM5D15	GP2L-152	501C1	4th. Video IF Plate
C50	10000		73960	BPD-01	DD-103	TM5S1	821-01	5HK-S1	RF Bypass
C51	4700		73473	BPD-005	DD-502	TM5D5	811-005	5HK-D47	4th. Video IF Screen

PROPERTY OF
L. F. BLANKENSHIP

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA RCA PART No.	AEROVOX PART No.	CENTRALAB DUBILIER PART No.	CORNELL-ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C52A	5000		76470	BPD-005	DD-2-502	TMSD5	811-005	5HK-2D47 4th. Video IF Cathode
B	5000			BPD-005		TMSD5	811-005	4th. Video IF Fil.
C53	.033	400	73552	P488-033		PTE6S3		Notus Pulse Coupling
C54	10		31709	SD0N750	TCN-10		N750K-100	STCU-Qi Fixed Trimmer
C55	100		75437	SI100	D6-101	TMST1	GP1K-101	SGA-T1 Video Output Screen
C56	.0033	600	73795	P684-0033	D6-332	PTE6D33	GP2-333-333	6TM-D33 Video Output Cathode
C57	10		31709	SD0N750	TCN-10		N750K-100	STCU-Qi Fixed Trimmer
C58	.001	600	75643	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1 Contrast Cont. Shunt
C59	33		28868		TCN-33		N750K-330	STCU-Q33 Contrast Cou. Shunt
C60	.1	200	73784	P588-1	DF-104	PT2F1		2TM-P1 Video Coupling
C61	4700		73473	BPD-025	DD-502	TMSD5	811-005	5HK-D47 RF Bypass
C62	.047	200	73558	P288-047	DF-503	PT2S5		2TM-S47 AGC Filter
C63	.0015	600	73598	P688-0015	D6-153	PTE6D15	GP2L-153	6TM-D15 AGC Filter
C64	330		76673		330			Horiz. Feedback
C65	10000		73960	BPD-01	DD-103	TMS81	831-01	5HK-S1 1st. Sound IF Grid
C66A	10000		75877	BPD-01	DD-3-103	TMSD81	831-01	5HK-S1 1st. Sound IF Plate
B	10000			BPD-01			831-01	5HK-S1 1st. Sound 1F Cathode
C67	10000		73960	BPD-01	DD-103	TMS81	831-01	5HK-S1 1st. Sound IF Cathode
C68	10000		75877	BPD-01	DD-3-103	TMSD81	831-01	5HK-S1 2nd. Sound IF Grid
C69A	10000		75877	BPD-01	DD-3-103	TMSD81	831-01	5HK-S1 2nd. Sound IF Plate
B	10000			BPD-01			831-01	5HK-S1 2nd. Sound IF Screen
C70	10000		73960	BPD-01	DD-103	TMS81	831-01	5HK-S1 2nd. Sound IF Cathode
C71	1-4		76800		829-4			Variable Trimmer
C72	470	500	39644	1468-0005	D6-471	5WST5	GP2K-471	1FM-35 Diode Load Cap.
C73	470	500	39644	1468-0005	D6-471	5WST5	GP2K-471	1FM-35 Diode Load Cap.
C74	330	500	78473	1468-00035	D6-331		GP2K-331	1FM-335 RF Bypass
C75	.0022	600	73595	P688-0022	D6-222	PTE-222	GP2-333-222	6TM-D22 De-Emphasis
C76	100		39396	SI100	D6-101	TMST1	GP1K-101	5GA-T1 Tone Comp.
C77	.0047	600	73920	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47 Audio Coupling
C78	.015	200	73797	P288-015		PTE6S15		6TM-S15 Tone Comp.
C79	.015	200	73797	P288-015		PTE6S15		6TM-S15 Tone Comp.
C80	.01	400	73581	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1 Audio Coupling
C81	.0022	400	73589		D6-272		GP2-333-272	Tone Comp.
C82	270		47617	SI270	D6-271		GP2K-271	5GA-T27 Tone Comp.
C83	.01	400	73581	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1 Audio Coupling
C84	.0033	600	73795	P688-0033	D6-332	PTE6D33	GP2-333-332	6TM-D3 Audio Output Plate
C85	.022	400	73562	P488-022	DF-203	PT4S22		4TM-S22 Vert. Sync. Sep. Cathode
C86	.01	400	73581	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1 Vert. Sync. Coupling
C87	.047	600	73592	P688-047	DF-503	PTE6S47		6TM-S47 Vert. Sync. Coupling
C88	.01	400	73581	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1 Vert. Sync. Coupling
C89	.0022	600	73595	P688-0022	D6-222	PTE6D22	GP2-333-222	6TM-D22 Vert. Integrator Net.
C90	.0047	600	73920	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47 Vert. Integrator Net.
C91	.0047	600	73920	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47 Vert. Integrator Net.
C92	.001	600	75643	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1 Vert. Integrator Net.
C93	.001	600	39396					Vert. Osc. Grid Cap.
C94	.033	600	73596	P688-033				Vert. Discharge
C95	.1	600	73557	P588-1	DF-104	PT6SP1		6TM-P1 Vert. Sweep Coupling
C96	.1	200	73784	P588-1	DF-104	PT2P1		2TM-P1 Vert. Sweep Coupling
C97	.001	1000	75643	P1088-001		PTE16D1		MB-D1 Vert. Feedback Net.
C98	.0022	600	73595	P688-0022	D6-222	PTE6D22	GP2-333-222	6TM-D22 Vert. Feedback Net.
C99	.0022	1000	73803	P1088-0022		PTE16D22		MB-D22 Vert. Feedback Net.
C100	.022	600	73798	P688-022		PTE6D22		6TM-S22 Vert. Feedback Net.
C101	.068	600	73798	P288-068		PTE6S68		6TM-S68 Vert. Feedback Net.
C102	.047	1000	73597	P1088-047				Vert. Sweep Coupling
C103	.0047	600	73920	P688-0047	D6-472	PTE6D47	GP2-333-472	6TM-D47 Integrator Net.
C104	.1	600	73551	P488-1	DF-104	PTE4P1		4TM-P1 Vert. Sweep Coupling
C105	.001	600	75643	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1 Horiz. Sync. Coupling
C106	100		39396	SI100	D6-101	TMST1	GP1K-101	5GA-T1 Horiz. Sync. Coupling
C107	82	1000	76474					Horiz. Sync. Coupling
C108	.047	600	73592	P688-047	DF-503	PTE6S47		6TM-S47 Horiz. AFC Plate
C109	.47	200	73787	P288-47		PT2P5		2TM-P47 Horiz. AFC Filter
C110	.022	400	73562	P488-022	DF-203	PT4S22		4TM-S22 Horiz. AFC Filter
C111	.1	400	73551	P488-1	DF-104	PT4P1		4TM-P1 Horiz. AFC Filter
C112	68	1000	76475					Horiz. Feedback
C113	12		33380		TCN-12		N750K-120	Horiz. Feedback
C114	330	1000	76476					Horiz. Osc. Grid Cap.
C115	.01	600	73594	P688-01		PTE6S1		6TM-S1 Fixed Trimmer
C116	820	500	76477					Horiz. Discharge
C117	.0068	600	76479					Horiz. Sweep Coupling
C118	.1	600	73557	P688-1	DF-104	PT6SP1		6TM-P1 Horiz. Output Screen
C119	.27	200	73786					Horiz. Output Cathode
C120	330	1000	76476					Fixed Trimmer
C121	.022	1000	73810	P1088-022				MB-S23 Damper Filter
C122	.027	1000	73811					Damper Filter
C123	270	1000	73091					Damper Filter
C124	500	20000	76461	HU20C	TV3-502	MM-F20TS		HV Filter
C125	.047	400	73071	489ZGXY-05		PJ4S47		4TM-S47 Line Filter
C126	.047	400	73071	489ZGXY-05		PJ4S47		4TM-S47 Line Filter
C127	4700		73473	BPD-005	DD-502	TMSD5	811-005	5HK-D47 RF Bypass

† Some models use 10MFD in this application
‡ Some models use 4-70MMF variable trimmer in this application

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1.5Meg	½	76171	Q18-159XX	AT-95		Volume Control - See Note
B	Shaft		Not Req.	Not Req.	FKR-1/4		Attach to R1A per instructions
C	Switch		Not Req.	T6-1	SW-A		Attach to R1A per instructions
R2A	15KΩ	½	76445				Contrast Control - Panel
B	200KΩ		76444				Brightness Control - Rear
				"Concentrikit"			
R3A	1Meg		76443	Bil-137*	RTV-136	SBB-588	Vert. Hold Control - Panel
B	50KΩ			Bil-123*			Horiz. Hold Control - Rear
C	Shaft End		Not Req.	K187*			Attach per instructions in "Concentrikit"
R4A	50KΩ		76447	Q11-123	AG-44-S	AN-31	AGC Control
B	Shaft		Not Req.	Not Req.	FKR-1/4	AK-1	Attach to R4A per instructions
R5A	1500Ω	½	76449	Q11-110	AG-11-S	AM-6	Vert. Linearity Control
B	Shaft		Not Req.	Not Req.	FKR-1/4	AK-1	Attach to R5A per instructions
R6A	2.5Meg	½	76444	Q11-239	AG-84-S	B-83	Height Control
B	Shaft		Not Req.	Not Req.	FKR-1/4		Attach to R6A per instructions

Note: Volume control and on-off switch is attached to rear of tone switch
* Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE NOTED
R8	3300Ω	½	503233	BTS-3300	Antenna Coil Shunt
R9	3300Ω	½	503233	BTS-3300	RF Amp. Grid
R10	150Ω	½	504415	BTS-150	AGC Network
R11	47Ω	½	503047		RF Amp. Cathode
R12	82Ω	5% ½	503082	BTS-82 5%	RF Amp. Cathode
R13	470KΩ	20% ½	504447		RF Amp. Grid
R14	1000Ω	20% ½	504210	BTS-1000	RF Amp. Decoupling
R15	1000Ω	20% ½	504210	BTS-1000	RF Amp. Decoupling
R16	100KΩ	½	504410		Isolation
R17	100KΩ	20% ½	504410		Mixer Grid
R18	3300Ω	20% ½	503233	BTS-3300	RF Coil Shunt
R19	100 KΩ	20% ½	504410		Osc. Grid
R20	10KΩ	20% ½	504310		Osc. Plate
R21	1000Ω	20% ½	504210	BTS-100	Decoupling
R22	680KΩ	5% ½	30563	BTS-680K 5%	AGC Network
R23	680KΩ	½	503368	BTS-680K	AGC Network
R24	100KΩ	½	503410	BTS-100K	AGC Network
R25	1000Ω	20% ½		BTS-1000	1st. Video IF Coil Shunt
R26	1000Ω	20% ½	504210	BTS-1000	AGC Network
R27	680Ω	½	503268	BTS-6800	1st. Video IF Coil Shunt
R28	100Ω	5% ½	502110	BTS-100	1st. Video IF Amp. Cathode
R29	47KΩ	½	513347		1st. Video IF Amp. Screen
R30	1000Ω	½	503210	BTS-1000	1st. Video IF Amp. Plate
R31	4700Ω	20% ½	504147	BTS-470	Decoupling
R32	100Ω	20% ½	504110	BTS-100	Decoupling
R33	5600Ω	5	76390	1 3/4A-5600	Voltage Divider - Wire Wound
R34	6666Ω		76469	1 3/4A-2500	Voltage Divider - Wire Wound
R35	1000Ω	½	503210	BTS-1000	2nd. Video IF Amp. Grid
R36	5600	5% ½	503056		2nd. Video IF Amp. Cathode
R37	47KΩ	½	513347		2nd. Video IF Amp. Screen
R38	1000Ω	20% ½	504210	BTS-1000	2nd. Video IF Amp. Plate Decoupling
R39	82KΩ	½	30564	BTS-820	AGC Network
R40	68KΩ	½	503368	BTS-68K	AGC Network
R41	150KΩ	½	503415	BTS-150K	AGC Network
R42	150KΩ	½	503415	BTS-150K	AGC Network
R43	100KΩ	½	504410		Isolation
R44	47KΩ	½	503347		Voltage Divider
R45	47KΩ	½	503347		Voltage Divider
R46	1.5Meg	½	503515	BTS-1.5Meg	Voltage Divider
R47	2.5Meg	½	76469	BTS-2500	Voltage Divider
R48	6800Ω	5% ½	14659	BTS-6800 5%	3rd. Video IF Coil Shunt
R49	68Ω	5% ½	54763		3rd. Video IF Amp. Cathode
R50	47K	20% ½	504247	BTS-47K	3rd. Video IF Amp. Screen - See Note 1
R51	1000Ω	20% ½	504210	BTS-1000	3rd. Video IF Amp. Plate Decoupling
R52	56KΩ	5% ½	502346	BTS-56K 5%	4th. Video IF Coil Shunt
R53	180Ω	½	503118	BTS-180	4th. Video IF Amp. Cathode
R54	1000Ω	20% ½	503210	BTS-1000	4th. Video IF Amp. Screen
R55	47KΩ	½	513347	BTS-47K	Voltage Divider
R56	18KΩ	½	503318	BTS-18K	Voltage Divider
R57	100Ω	½	503410		Noise Pulse Feedback
R58	6800Ω	½	513268		4th. Video IF Amp. Plate Decoupling
R59	470KΩ	½	504447		1st. Sound IF Amp. Grid
R60	1000Ω	20% ½	504210	BTS-1000	Isolation
R61	3900Ω	5% ½	30694	BTS-3900 5%	Video Det. Load
R62	43Ω	5% ½	502943		Video Output Cathode
R63	18KΩ	2	523318	BTS-18K	Video Output Screen Decoupling
R64	6000Ω	6	76838	1 3/4A-6000	Video Output Plate - Wire Wound
R65	470K	½	503447	BTS-470K	Voltage Divider
R66	33KΩ	½	513333	BTA-33K	Voltage Divider
R67	220Ω			BTS-220	Video Output Screen
R68	4700Ω	½	503247	BTS-4700	Contrast Network
R69	5600Ω	½	503256	BTS-5600	Contrast Network
R70	3300Ω	½	503233	BTS-3300	Contrast Network
R71	2200Ω	½	503223	BTS-2200	Voltage Divider
R72	560KΩ	½	503456	BTS-560K	Isolation
R73	150KΩ	20% ½	504415	BTS-150K	Picture Tube Cathode
R74	150KΩ	20% ½	504415	BTS-150K	Picture Tube Grid
R75	220KΩ	½	503423	BTS-220K	Voltage Divider
R76	100KΩ	½	503410	BTS-100K	Voltage Divider
R77	6800Ω	½	503268	BTS-6800	Bleeder
R78	56KΩ	½	503356	BTS-56K	Voltage Divider
R79	180KΩ	½	503418	BTS-180K	Voltage Divider
R80	8.2Meg	½	503593	BTS-8.2Meg	AGC Network
R81	10KΩ	20% ½	504310	BTS-10K	AGC Amp. Grid
R82	1.2Meg	5% ½	503512	BTS-1.2Meg 5%	AGC Amp. Grid
R83	18KΩ	½	523315	BTS-18K	AGC Amp. Cathode
R84	12KΩ	½	503312	BTS-12K	AGC Amp. Screen
R85	82Ω	5% ½	15981	BTS-82 5%	1st. Sound IF Amp. Cathode
R86	47K	½	503327	BTS-47K	1st. Sound IF Amp. Screen
R87	1000Ω	20% ½	504210	BTS-1000	1st. Sound IF Amp. Decoupling
R88	47KΩ	½	503347	BTS-47K	2nd. Sound IF Amp. Grid
R89	68Ω	5% ½	54763		2nd. Sound IF Amp. Cathode
R90	56KΩ	½	513356		2nd. Sound IF Amp. Screen
R91	1000Ω	20% ½	504210	BTS-1000	2nd. Sound IF Amp. Decoupling
R92	18KΩ	½	503318		Bleeder
R93	47Ω	½	30732		Balancing
R94	1200Ω	5% ½	30731	BTS-1200 5%	Balancing
R95	1000Ω	5% ½	34766	BTS-1000 5%	Balancing
R96	6800Ω	5% ½	14659	BTS-6800 5%	Ratio Det. Diode Load
R97	6800Ω	5% ½	14659	BTS-6800 5%	Ratio Det. Diode Load
R98	39KΩ	½	503339	BTS-39K	De-emphasis
R99	18KΩ	½	503318	BTS-18K	Tone Compensation
R100	27KΩ	½	503327	BTS-27K	Tone Compensation
R101	22KΩ	½	503322	BTS-22K	Tone Compensation
R102	10Meg	20% ½	504610	BTS-10Meg	AF Amp. Grid
R103	330KΩ	½	503433	BTS-330K	AF Amp. Plate
R104	470KΩ	20% ½	504447	BTS-470K	Output Grid
R105	330Ω	½		BW-1-330	Output Cathode - Wire Wound
R106	330Ω	½		BW-1-330	Output Cathode - Wire Wound
R107	470Ω	½	513347	BTA-470	Output Decoupling
R108	220KΩ	½	503422	BTS-220K	Vert. Sync. Separator Cathode
R109	120KΩ	½	503412	BTS-120K	Vert. Sync. Separator Plate
R110	1Meg	½	503510	BTS-1Meg	Vert. Sync. Separator Plate
R111	56KΩ	½	503356	BTS-56K	Vert. Sync. Separator Grid
R112	47KΩ	½	503347	BTS-47K	Vert. Sync. Separator Grid
R113	1.5Meg	5% ½	11769	BTS-1.5Meg 5%	Voltage Divider
R114	120KΩ	½	503412	BTS-120K	Vert. Sync. Amp. Grid

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA PART No.	IRC PART No.	IDENTIFICATION CODES
R115	270KΩ	½	503427	BTS-270K	Vert. Sync. Amp. Plate
R116	39KΩ	½	503339	BTS-39K	Differentiator
R117	22KΩ	½	503322	BTS-22K	Integrator Network
R118	8200Ω	½	503282	BTS-8200	Integrator Network
R119	8200Ω	½	503282	BTS-8200	Integrator Network
R120	5.6Meg	½	503556	BTS-5.6Meg	Differentiator
R121	68KΩ	½	504368	BTS-68K	Integrator Network
R122	470KΩ	½	503447	BTS-470K	Vert. Osc. Grid
R123	820KΩ	½	503482	BTS-820 K	Vert. Osc. Plate
R124	560KΩ	½	503456	BTS-560K	Voltage Divider
R125	10KΩ	½	503310	BTS-10K	Vert. Peaking
R126	220KΩ	5% ½	80180	BTS-210K 5%	Vert. Peaking
R127	2.35Meg	20% ½	504523	BTS-2.35Meg	Vert. Peaking
R128	8200Ω	½	503282	BTS-8200	Vert. Peaking
R129	68KΩ	½	504368	BTS-68KΩ	Vert. Feedback Network
R130	100KΩ	½	503410	BTS-100K	Vert. Feedback Network
R131	22KΩ	½	71989	BTA-22K	Vert. Feedback Network
R132	22KΩ	½	71989	BTA-22K	Vert. Feedback Network
R133	2.2Meg	20% ½	504522	BTS-2.2Meg	Vert. Output Grid
R134	470Ω	½	503147	BTS-470	Vert. Output Cathode
R135	330Ω	½	503133	BTS-330	Vert. Output Plate
R136	3300Ω	20% ½	504233	BTS-3300	Vert. Integrator Network
R137	15KΩ	½	503315	BTS-15K	Vert. Integrator Network
R138	3300Ω	½	503233	BTS-3300	Horiz. Sync. Seperator Plate
R139	27KΩ	½	513327	BTA-27K	Horiz. Sync. Seperator Grid
R140	150KΩ	½	503415	BTS-150K	Horiz. Sync. Seperator Cathode
R141	3.9Meg	½	503539	BTS-3.9Meg	Horiz. Sync. Amp. Grid
R142	1000Ω	½	503210	BTS-1000	Horiz. Sync. Amp. Cathode
R143	12KΩ	½	503312	BTS-12K	Horiz. Sync. Amp. Plate
R144	1Meg	20% ½	504510	BTS-1Meg	Horiz. Sync. Amp. Grid
R145	68KΩ	½	513368	BTA-68K	Voltage Divider
R146	22KΩ	½	513322	BTA-22K	Voltage Divider
R147	330KΩ	½	503433	BTS-330K	Horiz. AFC Grid
R148	820KΩ	½	503482	BTS-820K	Horiz. AFC Grid
R149	150KΩ	½	503415	BTS-150K	Horiz. Feedback
R150	82KΩ	½	513382	BTS-82K	Horiz. AFC Cathode
R151	330KΩ	5% ½	512433	BTA-330K 5%	Horiz. AFC Cathode
R152	3900Ω	½	503239	BTS-3900	Horiz. AFC Filter
R153	150KΩ	5% ½	512415	BTA-150K 5%	Horiz. Osc. Grid
R154	82Ω	½	502282	BTS-8200	Horiz. Osc. Transformer Shunt
R155	82KΩ	½	512382	BTA-82K	Horiz. Osc. Plate
R156	820KΩ	½	503482	BTS-820K	Voltage Divider
R157	470KΩ	20% ½	503447	BTS-470K	Horiz. Output Grid
R158	180Ω	2	76839	BW-2-180	Horiz. Output Cathode - Wire Wound
R159	6800Ω	3	533268	BTS-6800	Horiz. Output Screen
R160	47Ω	½	504047		Parasitic Suppressor
R161	56KΩ	½	503356	BTS-56K	Decoupling
R162	5.1Ω		76796		HV Rectifier Filament - Wire Wound
R163	560Ω	½	513156	BTA-560	Width Coil Shunt

Note 1. Some Models use a 4700Ω Resistor in this application

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @1.8A	115VAC @.280ADC	6.3VAC @6.4A	6.3VAC @4.2A SEC.4 6.3VAC @.6A	76429	P-8158 ① P-8154 ②		

① Drill New Mounting Holes. Parallel two windings for Sec. #2
② Mount Separately and use for Sec. #4

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING SEC.	REPLACEMENT DATA RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	220Ω Tapped @ 80Ω, 38Ω, 42Ω & 97Ω	0Ω	76795				Horiz. Output Trans.
T3	550Ω	18Ω	76431	A-8112 ① DY-9	A-3036 ② MDF-70		Vert. Output Trans.
T4A	24Ω		76616 ①				Vert. Deflection Coils
B	45Ω						

① Drill New Mounting Holes
② Complete with cable and plug

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T5	6.5KΩ	3.7Ω	360Ω	.5Ω	75520	A-3878	A-3020	R0-13	

SPEAKER

ITEM No.	RATINGS FIELD RES.	RATINGS V. C. IMP.	RATINGS PRI.	RATINGS SEC.	REPLACEMENT DATA RCA PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1A	P. M.		3.7Ω		92580-9W ① 75033 ① ② 76834 ③	ST-15 Mod. P8-7	SA21	① Used in Models 17T151, 17T153 ② Used in Models 17T172K, 17T173K & 17T174K ③ 4"x 6" P.M. Speaker used in Model 17T150
	CONE DIA.	V. C. DIA.						
SP1B	7 3/8"	9/16"						

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.290ADC	39Ω	.8 Hy.	76498	C-2326 ③	C-2996 ③	TR-3300③	③ Drill one new mounting hole

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	RCA PART No.	MERIT PART No.	IRC PART No.	
L2	Ant. Coil	.6Ω	.6Ω	73591			
L3	Ant. Coil	.6Ω	.6Ω	73591			
L4	IF Trap	0Ω		76542			Antenna Matching Transformer
L5	Ant. Shunt	0Ω		76538			Complete Part #76536
L6	Ant. Shunt	0Ω		76537			
L7	IF Trap	0Ω		76541			
L8	FM Trap	0Ω		76540			
L9	Ant. Coils	0Ω		76554			Complete with rotor, coils and C15
L10	RF Grid Coils	0Ω		76556			Complete with rotor, coils C14, R8, R9.
L11	RF Grid Coils	0Ω		76561			Channel 13
L12	RF Plate Coils	0Ω		76553			Complete with rotor, coils C25, R15
L13	RF Plate Coils	0Ω		76529			Includes Trimmer .8-3.8MMF
L14	RF Coupling Coil	0Ω		76562			
L15	Video Trap	0Ω		76535			
L16	Fil. Choke	0Ω		73477			
L17	Mixer Grid Coils	0Ω		76780 or 76551			Complete with rotor, Coils C24, C23 R16, R17 and R18 (76551-Early Production) (76780-Models marked M1)
L18	Mixer Grid Coil	0Ω		76560			Channel 13, Early Production
L19	Osc. Coils	0Ω		76779 or 76546			Complete with rotor, coils C27 and C28 (76546-Early Production) (76779-Models marked M1)
L20	Fil. Choke	0Ω		76763			
L21	Fil. Choke	0Ω		76763			
L22	Fil. Choke	0Ω					
L23	Conv. Plate	.3Ω	.1Ω	76528			
L24	1st. Video IF	.1Ω	.1Ω	76432			Includes trap
L25	2nd. Video IF Primary	.1Ω		76434			Includes trap
L26	2nd. Video IF Secondary	.1Ω		76435			Includes trap
L27	Fil. Choke	0Ω		73477			
L28	3rd. Video IF	.2Ω	.2Ω	76433			
L29	4th. Video IF	.2Ω	.2Ω	76433			
L30	Sound Take-off	6.4Ω		76437			Tap ④ 5.2Ω
L31	Peaking Coil	3.5Ω		76646	*TV-186		72 microhenries, wound on 3.3KΩ Resistor
L32	Peaking Coil	16Ω		75252	TV-188		500 microhenries
L33	Peaking Coil	4.2Ω		72619	♦ TV-181		93 microhenries, wound on 10KΩ Resistor
L34	4.5MC Trap	2.8Ω		76482	†TV-151		Wound on 47MMF Cap.
L35	Peaking Coil	16Ω		75252	TV-188		500 microhenries
L36	Sound IF	3.1Ω	1.8Ω	76438	†TV-108		
L37	Ratio Det.	4Ω	.2Ω	76439	TV-110		Tap ④ .5Ω
L38	Horiz. Osc.	68Ω	42Ω	76440	TV-162		Tap ④ 20Ω
L39	Width Coil	12Ω		76441	MWC-1		
L40	Horiz. Lin.	21Ω		76442	MWC-1		
L41	RF Choke	.72Ω		76440		CL-1	1.5 microhenries

* Parallel with 3.3K resistor
† Drill new mounting hole
♦ Parallel with 10K Resistor

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT	RCA PART No.	SYLVANIA PART No.	SELETRON PART No.	FEDERAL PART No.	
M1	.290ADC	76452	NH-5	6QS2	1023A	
M2	.290ADC	76452	NH-5	6QS2	1023A	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			RCA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M3	MDV	2/10 A 250 V.	76801		315.200		MDV 2/10	

PARTS LIST CONTINUED ON PAGE 18

PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					RCA PART No.		
M4	Bayonet	7.5	.2	White	11765		Type #51
M5	Bayonet	7.5	.2	White	11765		Type #51 used in console models only

MISCELLANEOUS

ITEM No.	PART NAME	RCA PART No.	NOTES
M6	RF Tuner		
	5th. Video IF		
	Resistor		10KΩ
M7	Capacitor		8MMF
	Capacitor		10MMF
	Crystal	76675	CK706
	RF Choke		36 Microhenries
M8	Switch	76446	Tone-TV-Phono
M9	Focus Magnet	76168	
M10	Magnet	76633	Pin Cushion Correction (2 Required) complete with support arms
M11	Ion Trap	76141	
A27	Trimmer	76800	1-4MMF (Ratio Det)
B3, B6	Trimmer	75217	10-160MMF (Horiz. Drive & Horiz. Lock)
	Knob	76595	Brightness, Vert. Hold (Maroon)
	Knob	76596	Brightness, Vert. Hold (Beige)
	Knob	76593	Channel Selector (Maroon)
	Knob	76594	Channel Selector (Beige)
	Knob	76591	Fine Tuning (Maroon)
	Knob	76592	Fine Tuning (Beige)
	Knob	74963	Contrast, Horiz. Hold and OFF/ON Volume (Maroon)
	Knob	75464	Contrast, Horiz. Hold and OFF/ON Volume (Beige)
	Knob	76597	Tone and TV-Phono (Maroon)
	Knob	76598	Tone and TV-Phono (Beige)

Video Det. Assembly Complete Part #76436

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL FREQUENCY ADJUSTMENT

Tune in a station, preferably a test pattern and turn the horizontal hold control to synchronize the picture horizontally. If the picture cannot be sychronized with the horizontal hold control adjust the horizontal frequency slug, (B1.) If the picture still will not sync. turn the horizontal waveform slug, (B2) several turns counter clockwise and readjust (B1) until the picture synchronizes.

If picture width or linearity is incorrect, adjust the horizontal drive trimmer, (B3) the horizontal width slug, (B4) and the horizontal linearity slug, (B5) for proper results.

HORIZONTAL WAVEFORM ADJUSTMENT

The horizontal waveform adjustment is made at the factory and normally should not require. readjustment. B1 and B2 are adjusted simultaneously while watching the picture.

Turn B1 until the picture loses sync. and one diagonal black bar sloping downward to the right appears on the screen. Turn B2 clockwise and at the same time adjust B1 to maintain the single diagonal black bar. Continue until the oscillator begins to motorboat, then turn B2 counter clockwise until the motorboating stops. To check the adjustment turn B1 until the picture loses sync., then reverse the direction of core rotation until the diagonal bar appears as before. Additional turning in the same direction should not result in more bars, but in motorboating.

Retouch adjustment of B2, if necessary, to attain this condition.

To observe the horizontal oscillator waveform, connect the low capacity probe of an oscilloscope to terminal C of the horizontal oscillator transformer L38. Turn the horizontal hold control one quarter turn from clockwise so that the picture is synchronized.

The waveform on the scope should appear as in Fig. 9. If it does not, adjust B2 for the desired waveform, meanwhile keeping the picture in sync. by readjusting the horizontal hold control if necessary.

HORIZONTAL LOCKING ADJUSTMENT

With the horizontal hold control in full counter-clockwise position momentarily interrupt the signal by switching to another channel and back. If the picture remains in sync. turn B1 and again switch off channel, repeating until the picture loses sync., with diagonal lines sloping down to the left. Slowly turn the horizontal hold control clockwise and note the least number of bars obtained just before the picture pulls into sync. If the number is more than 3 adjust the horizontal locking trimmer (B6) slightly clockwise. If the number is less than 2 adjust B6 counterclockwise. Recheck as above for the least number of bars and readjust B6, if necessary, until 2 or 3 bars are present. Turn the horizontal hold control fully clockwise and adjust B1 until the diagonal bar sloping down to the right appears on the screen, then reverse the direction of adjustment of B1 until the bar just disappears, leaving the picture in synchronization.

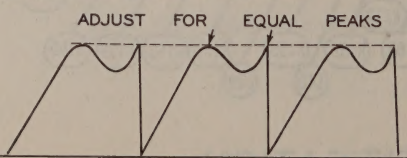


FIG. 9